To supersede all previous Price-Lists.
Prices subject to market changes without notice.

REUTER & MALLORY'S

ILLUSTRATED

Catalogue and Price-List

OF

RAILWAY, MACHINISTS' AND ENGINEERS'

SUPPLIES,

No. 14 South Charles Street,

South-West Cor. German Street,

P. O. Box 156. BALTIMORE.

INNES & COMPANY, PRINTERS AND BINDERS, 164 W. BALTIMORE ST.

1875.

CHARLES REUTER. J. D. MALLORY.

TO THE PUBLIC.

In presenting this Catalogue, our desire has been to illustrate all the various Supplies required by Railways, Machinists, and Engineers. In no case have we spared pains or expense to make this a book, not only for general convenience in ordering goods, but also one of reference and information.

Importing many of our leading articles, besides carrying a very full stock of all regular goods, enable us to fill all orders promptly and at market prices.

Hoping that this endeavor on our part, to suit the many interests of our patrons, may merit a continuance of those favors which have heretofore been so kindly bestowed upon us,

We are, yours, etc.,

REUTER & MALLORY.

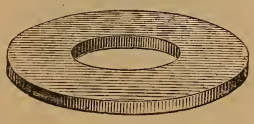
Baltimore, March 1st, 1875.

INDEX.

MANUFACTURERS' STANDARD LIST

OF

WASHERS.



DIAMETER.	SIZE OF HOLE.	THICKNESS WIRE GAUGE.	SIZE OF BOLT.	PRICE PER LB.
$\frac{1}{2}$	$\frac{1}{4}$	No. 18	$\frac{3}{16}$	34
$\frac{5}{8}$	$\frac{5}{16}$	" 16	$\frac{1}{4}$	32
$\frac{3}{4}$	$\frac{5}{16}$	" 16	$\frac{1}{4}$	28
$\frac{7}{8}$	$\frac{3}{8}$	" 16	$\frac{5}{16}$	24
1	$\frac{7}{16}$	" 14	$\frac{3}{8}$	20
$1\frac{1}{4}$	$\frac{1}{2}$	" 14	$\frac{7}{16}$	
$1\frac{3}{8}$	$\frac{9}{16}$	" 12	$\frac{1}{2}$	16
$1\frac{1}{2}$	$\frac{5}{8}$	" 12	$\frac{9}{16}$	
$1\frac{3}{4}$	$\frac{11}{16}$	" 10	$\frac{5}{8}$	15
2	$\frac{13}{16}$	" 10	$\frac{3}{4}$	
$2\frac{1}{4}$	$\frac{15}{16}$	" 9	$\frac{7}{8}$	
$2\frac{1}{2}$	$1\frac{1}{16}$	" 9	1	
$2\frac{3}{4}$	$1\frac{1}{4}$	" 9	$1\frac{1}{8}$	14
3	$1\frac{3}{8}$	" 9	$1\frac{1}{4}$	
$3\frac{1}{2}$	$1\frac{1}{2}$	" 9	$1\frac{3}{8}$	

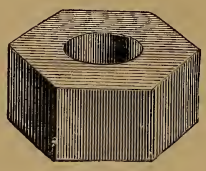
Washers ordered of thinner gauge, or sizes not enumerated above, will be charged extra, at discretion of the manufacturer.

Discount cts. per lb.

MANUFACTURERS' STANDARD LIST

OF

HEXAGON NUTS.



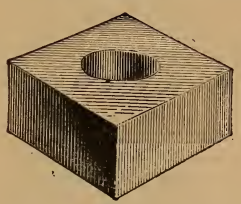
WIDTH.	THICKNESS.	HOLE.	SIZE OF BOLT.	PRICE PER LB.
$\frac{1}{2}$	$\frac{1}{4}$	$\frac{7}{32}$	$\frac{1}{4}$	35
$\frac{5}{8}$	$\frac{5}{16}$	$\frac{9}{32}$	$\frac{5}{16}$	30
$\frac{3}{4}$	$\frac{3}{8}$	$\frac{11}{32}$	$\frac{3}{8}$	24
$\frac{7}{8}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{1}{2}$	20
1	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{1}{2}$	18
$1\frac{1}{8}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{5}{8}$	
$1\frac{1}{4}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{5}{8}$	$16\frac{1}{2}$
$1\frac{1}{4}$	$\frac{3}{4}$	$\frac{9}{16}$	$\frac{5}{8}$	
$1\frac{3}{8}$	$\frac{3}{4}$	$\frac{11}{16}$	$\frac{3}{4}$	
$1\frac{1}{2}$	$\frac{7}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	
$1\frac{5}{8}$	$\frac{7}{8}$	$\frac{25}{32}$	$\frac{7}{8}$	
$1\frac{5}{8}$	1	$\frac{25}{32}$	$\frac{7}{8}$	
$1\frac{3}{4}$	1	$\frac{29}{32}$	1	16
$1\frac{3}{4}$	$1\frac{1}{8}$	$\frac{29}{32}$	1	
2	$1\frac{1}{4}$	1	$1\frac{1}{8}$	
$2\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{8}$	$1\frac{1}{4}$	
$2\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{4}$	$1\frac{3}{8}$	17
$2\frac{3}{4}$	$1\frac{5}{8}$	$1\frac{3}{8}$	$1\frac{1}{2}$	
3	$1\frac{3}{4}$	$1\frac{7}{16}$	$1\frac{5}{8}$	$17\frac{1}{2}$
$3\frac{1}{4}$	$1\frac{7}{8}$	$1\frac{9}{16}$	$1\frac{3}{4}$	
$3\frac{1}{2}$	2	$1\frac{11}{16}$	$1\frac{7}{8}$	19
$3\frac{1}{2}$	2	$1\frac{13}{16}$	2	

Sizes not enumerated on above list will be charged extra, at discretion of the manufacturer.

MANUFACTURERS' STANDARD LIST

OF

SQUARE NUTS.



WIDTH.	THICKNESS.	HOLE.	SIZE OF BOLT.	PRICE PER LB.
$\frac{11}{32}$	$\frac{5}{32}$	$\frac{3}{32}$	$\frac{1}{8}$	50
$\frac{13}{32}$	$\frac{3}{16}$	$\frac{5}{32}$	$\frac{3}{16}$	30
$\frac{1}{2}$	$\frac{1}{4}$	$\frac{7}{32}$	$\frac{1}{4}$	23
$\frac{5}{8}$	$\frac{5}{16}$	$\frac{9}{32}$	$\frac{5}{16}$	20
$\frac{3}{4}$	$\frac{3}{8}$	$\frac{11}{32}$	$\frac{3}{8}$	17
$\frac{7}{8}$	$\frac{7}{16}$	$\frac{13}{32}$	$\frac{7}{16}$	14
$\frac{7}{8}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{1}{2}$	
1	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{1}{2}$	
$1\frac{1}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{9}{16}$	12
$1\frac{1}{8}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{5}{8}$	
$1\frac{1}{4}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{5}{8}$	$11\frac{1}{2}$
$1\frac{3}{8}$	$\frac{3}{4}$	$\frac{21}{32}$	$\frac{3}{4}$	
$1\frac{1}{2}$	$\frac{3}{4}$	$\frac{21}{32}$	$\frac{3}{4}$	
$1\frac{5}{8}$	$\frac{7}{8}$	$\frac{23}{32}$	$\frac{7}{8}$	
$1\frac{3}{4}$	$\frac{7}{8}$	$\frac{25}{32}$	$\frac{7}{8}$	
$1\frac{3}{4}$	1	$\frac{7}{8}$	1	11
2	1	$\frac{7}{8}$	1	
2	$1\frac{1}{8}$	$\frac{15}{16}$	$1\frac{1}{8}$	
$2\frac{1}{4}$	$1\frac{1}{8}$	$\frac{15}{16}$	$1\frac{1}{8}$	
$2\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{16}$	$1\frac{1}{4}$	
$2\frac{1}{2}$	$1\frac{1}{4}$	$1\frac{1}{16}$	$1\frac{1}{4}$	12
$2\frac{3}{4}$	$1\frac{3}{8}$	$1\frac{3}{16}$	$1\frac{3}{8}$	
3	$1\frac{1}{2}$	$1\frac{5}{16}$	$1\frac{1}{2}$	$12\frac{1}{2}$
$3\frac{1}{4}$	$1\frac{5}{8}$	$1\frac{7}{16}$	$1\frac{5}{8}$	
$3\frac{1}{2}$	$1\frac{3}{4}$	$1\frac{9}{16}$	$1\frac{3}{4}$	
$3\frac{3}{4}$	$1\frac{7}{8}$	$1\frac{11}{16}$	$1\frac{7}{8}$	14
4	2	$1\frac{13}{16}$	2	

Sizes not enumerated on above list will be charged extra, at discretion of the manufacturer.

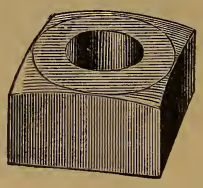
CHARLES REUTER. J. D. MALLORY.

MANUFACTURERS' STANDARD LIST

OF

Chamfered and Trimmed

SQUARE MACHINERY NUTS.



WIDTH.	THICKNESS.	HOLE.	SIZE OF BOLT.	PRICE PER LB.
$\frac{11}{32}$	$\frac{5}{32}$	$\frac{3}{32}$	$\frac{1}{8}$	50
$\frac{13}{32}$	$\frac{3}{16}$	$\frac{5}{32}$	$\frac{3}{16}$	30
$\frac{1}{2}$	$\frac{1}{4}$	$\frac{7}{32}$	$\frac{1}{4}$	23
$\frac{5}{8}$	$\frac{5}{16}$	$\frac{9}{32}$	$\frac{5}{16}$	20
$\frac{3}{4}$	$\frac{3}{8}$	$\frac{11}{32}$	$\frac{3}{8}$	17
$\frac{7}{8}$	$\frac{7}{16}$	$\frac{13}{32}$	$\frac{7}{16}$	14
$\frac{7}{8}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{1}{2}$	
1	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{1}{2}$	12
$1\frac{1}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{9}{16}$	
$1\frac{1}{8}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{5}{8}$	
$1\frac{1}{4}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{5}{8}$	$11\frac{1}{2}$
$1\frac{3}{8}$	$\frac{3}{4}$	$\frac{21}{32}$	$\frac{3}{4}$	
$1\frac{1}{2}$	$\frac{3}{4}$	$\frac{21}{32}$	$\frac{3}{4}$	11
$1\frac{5}{8}$	$\frac{7}{8}$	$\frac{25}{32}$	$\frac{7}{8}$	
$1\frac{3}{4}$	$\frac{7}{8}$	$\frac{25}{32}$	$\frac{7}{8}$	
$1\frac{3}{4}$	1	$\frac{7}{8}$	1	
2	1	$\frac{7}{8}$	1	
2	$1\frac{1}{8}$	$\frac{15}{16}$	$1\frac{1}{8}$	
$2\frac{1}{4}$	$1\frac{1}{8}$	$\frac{15}{16}$	$1\frac{1}{8}$	

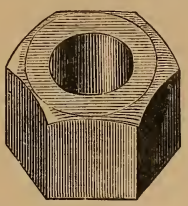
Sizes not enumerated on above list will be charged extra, at discretion of the manufacturer.

Discount cts. per lb.

CHARLES REUTER. J. D. MALLORY.

MANUFACTURERS' STANDARD LIST OF

CHAMFERED AND TRIMMED HEXAGON MACHINERY NUTS.



WIDTH.	THICKNESS.	HOLE.	SIZE OF BOLT.	PRICE PER LB.
1/2	1/4	7/32	1/4	35
5/8	5/16	9/32	5/16	30
3/4	3/8	11/32	3/8	24
7/8	1/2	7/16	1/2	20
1	1/2	7/16	1/2	18
1 1/8	5/8	9/16	5/8	
1 1/4	5/8	9/16	5/8	16 1/2
1 1/4	3/4	9/16	5/8	
1 3/8	3/4	21/32	3/4	
1 1/2	7/8	21/32	3/4	16
1 5/8	7/8	25/32	7/8	
1 5/8	1	25/32	7/8	
1 3/4	1	7/8	1	
1 3/4	1 1/8	7/8	1	
2	1 1/4	1 5/16	1 1/8	

Sizes not enumerated on above list will be charged extra, at discretion of the manufacturer.

Discount cts per lb.

TABLE showing the Average Number of Nuts in a Keg, 200 lbs. each, SQUARE and HEXAGON, of Standard Sizes.

Width.	Thickness.	Hole.	No. of Square.	No. of Hexagon.	Width.	Thickness.	Hole.	No. of Square.	No. of Hexagon.
1/2	1/4	7/32	13,333	14,000	1 3/4	1	7/8	332	343
5/8	5/16	9/32	6,808	8,888	2	1	7/8	217	272
3/4	3/8	11/32	3,636	6,037	2	1 1/8	1 5/16	191	224
7/8	7/16	13/32	2 538	2,743	2 1/4	1 1/8	1 5/16	145	200
7/8	1/2	7/16	2,260	2,520	2 1/4	1 3/8	1 1/16	113	160
1	1/2	7/16	1,624	2,051	2 1/2	1 1/4	1 1/16	112	124
1 1/8	1/2	1/2	1,354	1,660	2 3/4	1 3/8	1 3/16	73	80
1 1/8	5/8	9/16	1,180	1,276	3	1 1/2	1 5/16	68	75
1 1/4	5/8	9/16	850	987	3 1/4	1 5/8	1 7/16	52	59
1 3/8	3/4	21/32	600	740	3 1/2	1 3/4	1 9/16	43	47
1 1/2	3/4	21/32	490	573	3 3/4	1 7/8	1 11/16	37	40
1 5/8	7/8	25/32	346	360	4	2	1 13/16	27	29
1 3/4	7/8	25/32	324	336					

CHARLES REUTER. J. D. MALLORY.

MACHINE BOLTS.

SQUARE HEADS AND NUTS. FINISHED POINTS.

PRICE PER HUNDRED.

LENGTH.	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
1½ inch,	2 90	3 00	3 25	3 70	4 60	5 30	6 50	10 20
1¾ "	2 95	3 05	3 35	3 80	4 75	5 45	6 70	10 45
2 "	3 00	3 10	3 45	3 90	4 90	5 60	6 90	10 70
2¼ "	3 05	3 15	3 55	4 00	5 05	5 75	7 10	10 95
2½ "	3 10	3 20	3 65	4 10	5 20	5 90	7 30	11 20
2¾ "	3 15	3 25	3 75	4 20	5 35	6 05	7 50	11 45
3 "	3 20	3 30	3 85	4 30	5 50	6 20	7 70	11 70
3¼ "	3 25	3 35	3 95	4 40	5 65	6 35	7 90	11 95
3½ "	3 30	3 40	4 05	4 50	5 80	6 50	8 10	12 20
4 "	3 40	3 50	4 25	4 70	6 10	6 80	8 50	12 70

PRICE PER POUND.

	3/8	7/16	1/2	9/16	5/8	3/4
4¼ to 6 inches, ...	20	18	15	14	13	12
6¼ to 12 "	18	16	13	13	12	11
Over 12 "	16	14	12	12	11	10

⅞ and 1 inch, from 2 to 4 inches long, 16 cents.
⅞ and 1 inch, 4¼ inch and longer, same as ¾ inch.
Bolts, with Hexagon Heads or Hexagon Nuts, 10 per cent. extra.
If both Hexagon Heads and Hexagon Nuts, 20 per cent. extra.
Bolts with Button Heads, or Countersunk Heads, add 10 per ct. to above list.

MANUFACTURERS' STANDARD LIST.

BOLT ENDS.

DIAMETER.	LENGTH.	PRICE PER LB.
$\frac{1}{2}$ in. $\frac{9}{16}$ in.	6 in. to 10 in.	12 cents.
$\frac{5}{8}$ in. $\frac{11}{16}$ " $\frac{3}{4}$ "	3 " to 6 "	11 "
$\frac{5}{8}$ " $\frac{11}{16}$ " $\frac{3}{4}$ "	$6\frac{1}{2}$ " to 12 "	9 "
$\frac{7}{8}$ " to $1\frac{1}{2}$ "	6 " to 12 "	9 "
$1\frac{3}{4}$ and 2 "	6 " to 12 "	14 "

Wrought Iron Set Screws and Tap Bolts.

PRICE PER HUNDRED.

LENGTHS.	$\frac{1}{4}$ in.	$\frac{5}{16}$ in.	$\frac{3}{8}$ in.	$\frac{7}{16}$ in.	$\frac{1}{2}$ in.	$\frac{9}{16}$ in.	$\frac{5}{8}$ in.	$\frac{3}{4}$ in.
$1\frac{1}{2}$ inch,	2 60	2 70	2 85	3 20	3 85	4 40	5 50	8 50
$1\frac{3}{4}$ "	2 65	2 75	2 95	3 30	4 00	4 55	5 70	8 75
2 "	2 70	2 80	3 05	3 40	4 15	4 70	5 90	9 00
$2\frac{1}{4}$ "	2 75	2 85	3 15	3 50	4 30	4 85	6 10	9 25
$2\frac{1}{2}$ "	2 80	2 90	3 25	3 60	4 45	5 00	6 30	9 50
$2\frac{3}{4}$ "	2 85	2 95	3 35	3 70	4 60	5 15	6 50	9 75
3 "	2 90	3 00	3 45	3 80	4 75	5 30	6 70	10 00

With Hexagon Heads, 50 cents per 100 more.

Case Hardened Set Screws, add 50 cents to above list.

WOOD AND LAG SCREWS.

PRICE PER HUNDRED.

LENGTH.	DIAMETER.			LENGTH.	DIAMETER.		
	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$		$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$
$1\frac{1}{2}$ inch,				4 inch,	3 75	4 50	6 50
$1\frac{3}{4}$ "				$4\frac{1}{2}$ "	4 00	5 00	7 00
2 "	3 30	3 75	5 75	5 "	4 25	5 50	7 50
$2\frac{1}{2}$ "				6 "	4 50	6 00	8 00
3 "				7 "	5 00	6 50	8 50
$3\frac{1}{2}$ "	3 50	4 00	6 00	8 "	6 00	7 00	9 00

PRICE PER POUND.

$\frac{3}{8}$ ×$3\frac{1}{2}$ inches to 6 inches,	20 cts.
$\frac{7}{16}$ ×$3\frac{1}{2}$ " 6 "	18 "
$\frac{1}{2}$ ×$3\frac{1}{2}$ " 6 "	15 "
$\frac{5}{8}$ ×3 " $4\frac{1}{2}$ "	13 "
$\frac{5}{8}$ ×5 inches to 12 inches,	12 "
$\frac{3}{4}$ inch and larger ×3 to 5 inches,	12 "
$\frac{3}{4}$ " " ×6 to 12 "	11 "

Our Wood Screws are cut with deep threads, and made with deep points, and are always made with square heads, unless otherwise ordered.

BOLTS,

With Square or Round Countersunk Heads, for Plows, &c.

(WITH RIGHT OR LEFT HAND THREADS.)

LENGTH.	$\frac{3}{8}$ inch diam.	$\frac{7}{16}$ inch diam.	$\frac{1}{2}$ inch diam.
$1\frac{1}{4}$ inch.	$2 40	$3 12	$4 20
$1\frac{1}{2}$ "	2 50	3 30	4 45
$1\frac{3}{4}$ "	2 65	3 50	4 68
2 "	2 75	3 67	4 90
$2\frac{1}{4}$ "	2 88	3 85	5 25
$2\frac{1}{2}$ "	3 00	4 00	5 40
$2\frac{3}{4}$ "	3 12	4 20	5 65
3 "	3 25	4 38	5 88
$3\frac{1}{4}$ "	3 37	4 55	6 12
$3\frac{1}{2}$ "	3 50	4 75	6 35
$3\frac{3}{4}$ "	3 62	4 90	6 60
4 "	3 75	5 12	6 85

BOLTS, WITH PLAIN ROUND COUNTERSUNK HEADS.

DIAMETER.		LENGTH.		PRICE.
$\frac{1}{4}$	$\frac{5}{16}$	1	$1\frac{1}{2}$	$2 00 per 100
$\frac{1}{4}$	$\frac{5}{16}$	$1\frac{3}{4}$	$2\frac{1}{4}$	2 25 "
$\frac{1}{4}$	$\frac{5}{16}$	$2\frac{1}{2}$	3	2 50 "
$\frac{3}{8}$	$\frac{7}{16}$	$1\frac{1}{2}$	$1\frac{1}{2}$	2 50 "
$\frac{3}{8}$	$\frac{7}{16}$	$1\frac{3}{4}$	$2\frac{1}{4}$	3 00 "
$\frac{3}{8}$	$\frac{7}{16}$	$2\frac{1}{2}$	3	3 50 "

TURNBUCKLES OR SWIVELS.

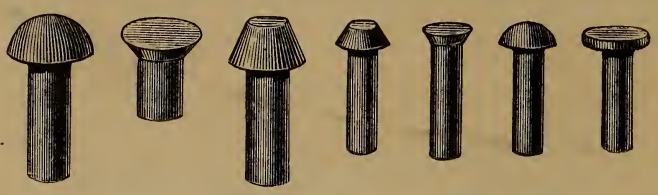
Size of Iron,	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	INCHES.
Price,	$1.00	1.25	1.50	each.

Size of Iron,	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2 in.
Price per pound,	25	25	25	20	20	20	20	20

Larger Sizes made to order.

Tank, Boiler and Coopers' Rivets,

With Flat, Cone, Button, or Countersunk Heads.



DIAMETER.	LENGTH.	DIAMETER.	LENGTH.
$\frac{7}{16}$	$\frac{1}{2}$ in. to 2 in.	No. 6 W. G.	$\frac{1}{4}$ in. to $1\frac{3}{4}$ in.
$\frac{3}{8}$	$\frac{7}{16}$ " $2\frac{1}{2}$ "	" 7 "	$\frac{1}{4}$ " $1\frac{3}{4}$ "
$\frac{5}{16}$	$\frac{7}{16}$ " $2\frac{1}{2}$ "	" 8 "	$\frac{1}{4}$ " $1\frac{3}{4}$ "
$\frac{1}{4}$ or No. 3 W. G.	$\frac{5}{16}$ " $2\frac{1}{2}$ "	" 9 "	$\frac{1}{4}$ " $1\frac{3}{4}$ "
" 4 "	$\frac{1}{4}$ " 2 "	" 10 "	$\frac{1}{4}$ " $1\frac{3}{2}$ "
" 5 "	$\frac{1}{4}$ " $1\frac{3}{4}$ "		

Burden's Boiler Rivets and Stay Bolts, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, and $\frac{7}{8}$ diameter, made to order and kept in stock.

Rivets in papers warranted.

IRON—BLACK.

BY THE PACKAGE.

8 oz. per M.,	$0 28	3 lb., per M.,	$0 70
10 " " "	31	4 " " "	85
12 " " "	34	5 " " "	1 00
1 lb. " "	38	6 " " "	1 20
$1\frac{1}{4}$ " " "	42	7 " " "	1 35
$1\frac{1}{2}$ " " "	46	8 " " "	1 50
$1\frac{3}{4}$ " " "	50	10 " " "	1 80
2 " " "	55	12 " " "	2 10
$2\frac{1}{2}$ " " "	63	14 " " "	2 40

IRON—TINNED.

BY THE PACKAGE.

8 oz., per M.,	$0 33	2 lb., per M.,	$0 65
10 " " "	36	$2\frac{1}{2}$ " " "	75
12 " " "	40	3 " " "	90
1 lb., " "	45	4 " " "	1 20
$1\frac{1}{4}$ " " "	50	5 " " "	1 40
$1\frac{1}{2}$ " " "	55	6 " " "	1 60
$1\frac{3}{4}$ " " "	60	7 " " "	1 80

COOPERS' RIVETS 1 and 2d., 3 and 4d., 5 and 6d.

CHARLES REUTER. J. D. MALLORY.

Carriage Bolts, Forged Nuts, Oval Heads.

List Revised and Adopted at a Meeting of Manufacturers, held at Pittsburgh, June 11th, 1873.

1	1/4	5/16	3/8	7/16	1/2	9/16 & 5/8
1	2 40					
1 1/4	2 40					
1 1/2	2 40	3 00				
1 3/4	2 45	3 10				
2	2 50	3 20	4 00	6 00	7 25	
2 1/4	2 55	3 30	4 15	6 20	7 50	
2 1/2	2 60	3 40	4 30	6 40	7 75	
2 3/4	2 65	3 50	4 45	6 60	8 00	
3	2 70	3 60	4 60	6 80	8 25	15 00
3 1/4	2 75	3 70	4 75	7 00	8 50	15 40
3 1/2	2 80	3 80	4 90	7 20	8 75	15 80
3 3/4	2 85	3 90	5 05	7 40	9 00	16 20
4	2 90	4 00	5 20	7 60	9 25	16 60
4 1/4	2 95	4 10	5 35	7 80	9 50	17 00
4 1/2	3 00	4 20	5 50	8 00	9 75	17 40
4 3/4	3 05	4 30	5 65	8 20	10 00	17 80
5	3 10	4 40	5 80	8 40	10 25	18 20
5 1/2	3 20	4 60	6 10	8 80	10 75	19 00
6	3 30	4 80	6 40	9 20	11 25	19 80
6 1/2	3 40	5 00	6 70	9 60	11 75	20 60
7	3 50	5 20	7 00	10 00	12 25	21 40
7 1/2		5 40	7 30	10 40	12 75	22 20
8		5 60	7 60	10 80	13 25	23 00
8 1/2		5 80	7 90	11 20	13 75	23 80
9		6 00	8 20	11 60	14 25	24 60
9 1/2		6 20	8 50	12 00	14 75	25 40
10		6 40	8 80	12 40	15 25	26 20
11			9 40	13 20	16 25	27 80
12			10 00	14 00	17 25	29 40
13				14 80	18 25	31 00
14				15 60	19 25	32 60
15					20 25	34 20
16					21 25	35 80

CHARLES REUTER. J. D. MALLORY.

PATENT GIMLET SCREWS.

IRON SCREWS.

No.	
¼ INCH.	
0,	$0 50
1,	50
2,	50
⅜ INCH.	
1,	50
2,	50
3,	50
4,	50
5,	53
6,	55
7,	63
8,	68
½ INCH.	
2,	50
3,	50
4,	50
5,	53
6,	55
7,	63
8,	68
9,	76
10,	81
⅝ INCH.	
2,	53
3,	53
4,	55
5,	58
6,	63
7,	68
8,	76
9,	81
10,	87
11,	92
12,	97
¾ INCH.	
4,	58
5,	63
6,	68
7,	74
8,	79
9,	84
10,	89
11,	95
12,	1 01
13,	1 27
14,	1 54
15,	1 95
16,	2 57

No.	
⅞ INCH.	
5,	$0 68
6,	71
7,	76
8,	81
9,	87
10,	92
11,	1 00
12,	1 08
13,	1 30
14,	1 57
15,	1 98
16,	2 60
1 INCH.	
5,	76
6,	79
7,	84
8,	87
9,	92
10,	97
11,	1 05
12,	1 18
13,	1 35
14,	1 62
15,	2 03
16,	2 65
17,	3 00
18,	3 50
20,	4 25
1¼ INCH.	
7,	97
8,	1 00
9,	1 05
10,	1 13
11,	1 21
12,	1 31
13,	1 44
14,	1 70
15,	2 10
16,	2 73
17,	3 05
18,	3 55
20,	4 35
1½ INCH.	
8,	1 13
9,	1 18
10,	1 23
11,	1 34
12,	1 44
13,	1 60
14,	1 84
15,	2 19
16,	2 83
17,	3 13
18,	3 65
20,	4 50

No.	
1¾ INCH.	
9,	$1 37
10,	1 42
11,	1 50
12,	1 65
13,	1 84
14,	2 07
15,	2 31
16,	2 98
17,	3 28
18,	3 30
20,	4 70
22,	6 29
24,	7 95
2 INCH.	
10,	1 50
11,	1 63
12,	1 86
13,	2 07
14,	2 31
15,	2 55
16,	3 18
17,	3 50
18,	4 00
20,	4 95
22,	6 39
24,	8 10
2¼ INCH.	
11,	2 28
12,	2 39
13,	2 63
14,	2 90
15,	3 21
16,	3 46
17,	3 84
18,	4 30
20,	5 25
22,	6 59
24,	8 30
2½ INCH.	
12,	2 92
13,	3 18
14,	3 48
15,	3 87
16,	4 13
17,	4 50
18,	4 79
20,	5 55
22,	6 89
24,	8 53

No.	
2¾ INCH.	
13,	$3 48
14,	3 84
15,	4 13
16,	4 50
17,	5 09
18,	5 48
20,	6 56
22,	8 07
24,	9 68
3 INCH.	
14,	4 13
15,	4 50
16,	5 09
17,	5 68
18,	6 30
20,	7 48
22,	9 19
24,	11 16
26,	12 47
3½ INCH.	
17,	6 17
17,	6 86
18,	7 68
20,	9 42
22,	10 93
24,	12 11
26,	13 30
4 INCH.	
18,	9 06
20,	11 35
22,	12 80
24,	14 11
26,	15 75
4½ INCH.	
18,	10 50
20,	12 67
22,	14 11
24,	15 75
26,	17 72
5 INCH.	
20,	14 77
22,	16 41
24,	17 72
26,	19 69
6 INCH.	
24,	22 15
26,	25 43
28,	29 70
30,	34 45

BRASS SCREWS.

No.	
⅜ INCH.	
1,	$0 89
2,	89
3,	89
4,	92
5,	96
6,	1 02
7,	1 11
½ INCH.	
2,	89
3,	89
4,	92
5,	96
6,	1 02
7,	1 11
8,	1 19
9,	1 29
10,	1 43
⅝ INCH.	
2,	90
3,	90
4,	93
5,	98
6,	1 04
7,	1 13
8,	1 20
9,	1 31
10,	1 44
11,	1 59
12,	1 80
¾ INCH.	
4,	96
5,	1 01
6,	1 07
7,	1 14
8,	1 23
9,	1 35
10,	1 49
11,	1 64
12,	1 80
13,	2 03
14,	2 33
15,	2 70
16,	3 15

No.	
⅞ INCH.	
6,	$1 10
7,	1 19
8,	1 29
9,	1 41
10,	1 56
11,	1 74
12,	1 95
13,	2 28
14,	2 67
15,	3 05
16,	3 45
1 INCH.	
6,	1 14
7,	1 26
8,	1 40
9,	1 55
10,	1 73
11,	1 94
12,	2 18
13,	2 45
14,	2 75
15,	3 08
16,	3 53
18,	4 13
1¼ INCH.	
7,	1 35
8,	1 46
9,	1 73
10,	2 03
11,	2 33
12,	2 63
13,	2 93
14,	3 23
15,	3 53
16,	3 83
17,	4 13
18,	4 50
20,	5 25
1½ INCH.	
8,	1 88
9,	2 09
10,	2 31
11,	2 58
12,	2 88
13,	3 23
14,	3 63
15,	4 13
16,	4 65
17,	5 25
18,	6 00
20,	7 80

No.	
1¾ INCH.	
9,	2 45
10,	2 69
11,	2 93
12,	3 24
13,	3 65
14,	4 14
15,	4 73
16,	5 40
17,	6 17
18,	7 02
20,	8 10
22,	9 60
24,	11 25
2 INCH.	
10,	3 00
11,	3 27
12,	3 57
13,	4 16
14,	4 74
15,	5 33
16,	5 91
17,	6 50
18,	7 08
20,	8 34
22,	10 50
24,	12 00
2¼ INCH.	
12,	4 13
13,	4 70
14,	5 31
15,	5 90
16,	6 45
17,	7 05
18,	7 80
20,	8 70
22,	11 25
2½ INCH.	
14,	5 88
15,	6 45
16,	6 95
17,	7 80
18,	8 66
20,	10 53
22,	12 45
24,	14 63
3 INCH.	
16,	8 43
18,	10 23
20,	12 96
22,	15 75
24,	19 50
26,	24 00

Wrought Iron Welded Tubes,

FOR

GAS, STEAM AND WATER.

INSIDE DIAMETER.	PRICE PER FOOT WRO'HT IRON.	PRICE PER FOOT *GALVANIZED.	INSIDE DIAMETER.	PRICE PER FOOT WRO'HT IRON.	PRICE PER FOOT GALVANIZED.
Inches.	$ c.	$ c.	Inches.	$ c.	$ c.
⅛	.04	.08	2½	.54	.77
¼	.04	.08	3	.67	1.00
⅜	.05	.08	3½	.90	1.30
½	.07	.12	4	1.10	1.60
¾	.09	.14	4½	1.40	2.00
1	.12	.19	5	1.65	2.35
1¼	.19	.28	6	2.25	3.50
1½	.25	.36	7	3.25	
2	.34	.48	8	4.50	

*Galvanized Pipe designed especially for Water, being superior to Lead Pipe.

REVISED PRICE LIST OF

MORRIS, TASKER & CO'S

LAP WELDED BOILER TUBES.

OUTSIDE DIAMETER. INCHES.	THICKNESS WIRE GAUGE.	PRICE PER FOOT.	OUTSIDE DIAMETER. INCHES.	THICKNESS WIRE GAUGE.	PRICE PER FOOT.
1	15		3½	11	50
1¼	15		3¾	11	55
1½	14		4	10	65
1¾	13	24	4½	10	76
2	13	24	5	9	95
2¼	13	27	6	8	1 25
2½	12	31	7	8	1 55
2¾	12	34	8	8	2 50
3	12	38	9	7	
3¼	11	44	10	6	

Cast Iron Drain Pipe and Fittings.

Diameter in Inches,	2	3	4	5	6	7	8	10	12
Pipe, Length over all, each piece	5 feet.	5 feet.	5 feet.	5 feet.	6 feet.	6 feet.	6 ft. 2 in.	6 feet.	6 feet.
Pipe, Price per foot,	$ 30	$ .40	$ 50	$ 65	$ 75	$1 10	$1 25	$2 25	$3 50
Pipe, Double Hub, per length of 5 ft.	2 00	2 50	3 00	3 75	.....	.....	.....	.....	.....
Tee Branches,	75	1 00	1 30	1 60	2 00	3 00	3 75	7 00	12 50
Y Branches,	1 40	1 60	1 95	2 25	2 60	3 75	4 50	7 00	.....
Double Y Branches,	1 90	2 25	2 75	3 25	4 00	7 50	.....	.....	.....
Ell (or bend)	75	1 00	1 30	1 60	1 95	2 25	2 60	5 00	8 00
Eighth Bend,	65	75	1 15	1 40	1 70	1 95	2 25	3 00	5 00
Return Bend,	.....	1 95	2 60	3 25	3 90	.....	.....	.....	.....
Reducers,	.....	78	90	1 00	1 15	1 30	1 60	1 95	.....
Double Hubs,	65	75	90	1 00	1 15	1 30	1 60	1 95	.....
Sleeves,	65	75	90	1 00	1 15	1 30	1 60	1 95	.....
Crosses,	1 60	1 95	2 25	2 60	4 00	5 00	6 00	.....	.....
S Traps,	1 95	2 25	3 25	4 00	5 25	.....	.....	.....	.....
Half S or P Traps,	1 25	2 25	3 25	4 00	5 25	.....	.....	.....	.....
Running Trap with hand hold,	1 95	2 25	3 25	4 00	5 25	7 15	10 00	.....	.....
Offsets,	1 50	1 75	2 40	3 00	4 00	.....	.....	.....	.....
Hooks for New Soil Pipe,	15	20	20	25	30	55	.....	.....	.....

TERRA COTTA PIPE.

Size of Bore.	Main Pipe per Yard.	Weight per Yard.	Bends and Elbows Each.	Branches.	Traps, Each.
2 inch.	$ 39	15 lbs.	$ 40	55	$ 1 00
3 "	48	22 "	50	69	1 25
4 "	60	28 "	65	85	1 73
5 "	75	35 "	85	1 03	2 50
6 "	90	45 "	1 15	1 20	3 50
8 "	1 35	67 "	2 00	1 68	6 00
10 "	2 10	90 "	3 00	2 35	8 00
12 "	2 40	118 "	3 75	2 90	10 00
15 "	3 75	150 "	5 00		
18 "	4 80	210 "	7 50		
21 "	6 90		9 00		
24 "	9 00		15 00		
30 "	13 50		20 00		

PRICE LIST

OF

HEAVY

WROUGHT IRON ARTESIAN TUBE,

WITH

Screw-and-Socket Joints,

FINISHED SMOOTH INSIDE.

INSIDE DIAMETER, IN.	WEIGHT PER FOOT, LBS.	PRICE PER FOOT.
1½	2.694	$ 35
2	3.667	55
2½	5.773	80
3	7.547	1 05
3½	9.055	1 40
4	10.728	1 75
4½	12.492	2 10
5	14.564	2 40
6	18.767	3 50
7	23.410	4 80
8	28.348	6 00

FOR OIL WELLS.

PRICE LIST

OF

OIL WELL CASING,

OR

LIGHT ARTESIAN WELL TUBE,

With Screws and Sockets, Finished Smooth Inside.

DIAMETER OUTSIDE.	DIAMETER, NOMINAL INSIDE.	WEIGHT PER FT., LBS.	PRICE PER FOOT.
$1\frac{3}{4}$	$1\frac{1}{2}$	1.665	$ 44
$2\frac{1}{4}$	2	2.238	50
$2\frac{1}{2}$	$2\frac{1}{4}$	2.755	56
$2\frac{3}{4}$	$2\frac{1}{2}$	3.045	64
3	$2\frac{3}{4}$	3.333	74
$3\frac{1}{4}$	3	3.958	80
$3\frac{1}{2}$	$3\frac{1}{4}$	4.272	88
$3\frac{3}{4}$	$3\frac{1}{2}$	4.590	1 10
4	$3\frac{3}{4}$	5.320	1 33
$4\frac{1}{4}$	4	5.500	1 50
$4\frac{1}{2}$	$4\frac{1}{4}$	6.010	1 65
5	$4\frac{3}{4}$	7.226	2 00
$5\frac{1}{4}$	5	7.667	2 13
$5\frac{1}{2}$	$5\frac{3}{16}$	8.083	2 33
6	$5\frac{5}{8}$	9.346	2 47
$6\frac{5}{8}$	$6\frac{1}{4}$	10.064	3 00
7	$6\frac{5}{8}$	12.435	3 33
8	$7\frac{5}{8}$	15.109	5 00
$8\frac{5}{8}$	$8\frac{1}{4}$	16.155	6 00

MACHINE BELTING.

Our Belting is made of *Heavy Cotton Duck*, coated with the best India Rubber; is unaffected by *Heat*, *Cold* or *Moisture*, and is preferred to Leather or any other material, for *Elevators*, *Gin Bands*, *Agricultural Machines*, *Flouring Mills*, *&c.*, *&c.*

3 PLY.		4 PLY.	
2 inch, per foot,	17 cents.	2 inch, per foot,	21 cents.
3 " "	26 "	3 " "	31 "
4 " "	34 "	4 " "	42 "
5 " "	43 "	5 " "	52 "
6 " "	52 "	6 " "	62 "
7 " "	60 "	7 " "	73 "
8 " "	70 "	8 " "	84 "
9 " "	80 "	9 " "	95 "
10 " "	90 "	10 " "	107 "
11 " "	100 "	11 " "	118 "
12 " "	108 "	12 " "	130 "
13 " "	118 "	13 " "	142 "
14 " "	128 "	14 " "	154 "
15 " "	138 "	15 " "	166 "
16 " "	150 "	16 " "	178 "
18 " "	170 "	18 " "	202 "
20 " "	190 "	20 " "	226 "
22 " "	212 "	22 " "	252 "
24 " "	236 "	24 " "	280 "

Intermediate widths at proportionate prices.

Heavy 5 and 6-ply Belts made to order, for purposes where great strength is required, as a substitute for double leather, at an advance of twenty-five and fifty per cent. on 4-ply prices.

2-PLY MACHINE BELTING,

For Agricultural Machines, Railway Belts and other light work.

1 inch, per foot,	7 cents.	$2\frac{1}{2}$ inch, per foot,	17 cents.
$1\frac{1}{4}$ " "	$8\frac{1}{2}$ "	3 " "	20 "
$1\frac{1}{2}$ " "	10 "	$3\frac{1}{2}$ " "	24 "
2 " "	14 "	4 " "	28 "

Special orders for Belts of any thickness and width can be executed within one week from the receipt of the order; but keep no Belts on hand heavier than "four-ply," or more than 20 inches in width. Have constantly on hand a very large stock, and can usually fill orders on the same day they are received.

Endless Belts of any width or length made to order.

A full Roll of Belting Measures from 250 to 300 feet.

GUM STEAM PACKING.

	PER LB.
MIXED OR FIBROUS PACKING,	
From $\frac{3}{32}$ of an inch upward,	50 cents.
THINNER SIZES OF SAME,	
Say $\frac{1}{16}$ of an inch and less,	60 "
GUM PACKING,	
With cloth insertion, from $\frac{3}{32}$ of an inch upward,	55 "
THINNER SIZES OF SAME,	
Say $\frac{1}{16}$ of an inch and less,	65 "
GASKETS OF FIBROUS PACKING,	60 "
PURE VULCANIZED SHEET RUBBER,	
Of all thickness,	100 "
PURE VULCANIZED RUBBER VALVES,	$1.00 to 50 "
TUCKS ROUND, PISTON AND VALVE ROD PACKING,	
In length of twelve feet,	80 "
SQUARE PISTON AND VALVE ROD PACKING,	
All sizes from one quarter to two inches square, in lengths of 20 feet, either with or without elastic back,	80 "

Special orders for Gaskets, Valves, &c., of any size for pattern that we do not keep on hand, can be executed within one week from the receipt of the order.

Machine Cut Belt Lacings.

PRICE LIST.

⅜ inch wide,	$1 50 per 100 feet.
½ " "	2 00 " "
⅝ " "	2 75 " "
¾ " "	3 50 " "

These strings are cut from Page's Patent Lacing, are put up in very neat packages of 100 feet each, and are a great economy, as they are always ready for use.

WALRUS OR SEA HORSE LEATHER,

For Polishing Steel, Brass and Plated Ware.

PAGE'S PATENT CONDENSED LACE LEATHER.

No. 1,	$4 00 per side.
" 2,	3 50 " "
" 3,	3 00 " "

PATENT ROUND BELTING.

¼ inch, per foot,	15 cents.	⅝ inch, per foot,	35 cents.
⅜ " "	20 "	¾ " "	45 "
½ " "	30 "	1 " "	65 "

Twisted Belts Cheaper.

COPPER RIVETS AND BURRS.

BELT PUNCHES.

No.	0	6	8	0	10	12	14
Cts.	30	35	40	45	50	60	70 each.

SOAPSTONE PACKING, all Sizes.

ITALIAN HEMP PACKING.

ENGINE, HYDRANT AND CONDUCTING HOSE.

The 2-ply Hose, or Conducting Hose, is not calculated to stand much pressure. The 3-ply Hose (used for Hydrants, etc.,) is made to stand a pressure of 75 lbs. to the square inch. The 4 ply Hose (used for Locomotives and for Leading Hose for Fire Engines, and other purposes,) is made to withstand a pressure of 250 lbs. to the square inch. Hose made specially to order for Steam Fire Engines and Steam Pumps, where unusual strength is required.

CONDUCTING HOSE, 2-PLY.

Internal Diameter.		Internal Diameter.	
½ inch, per foot,	17 cents.	2¾ inch, per foot,	92 cents.
¾ " "	25 "	3 " "	100 "
⅞ " "	29 "	4 " "	133 "
1 " "	33 "	5 " "	166 "
1¼ " "	42 "	6 " "	200 "
1½ " "	50 "	7 " "	233 "
1¾ " "	58 "	8 " "	266 "
2 " "	66 "	9 " "	300 "
2¼ " "	75 "	10 " "	333 "
2½ " "	83 "		

HYDRANT HOSE, 3-PLY.

Internal Diameter.		Internal Diameter.	
½ inch, per foot,	20 cents.	1¾ inch, per foot,	70 cents.
¾ " "	30 "	2 " "	80 "
⅞ " "	35 "	2¼ " "	90 "
1 " "	40 "	2½ " "	100 "
1¼ " "	50 "	2¾ " "	110 "
1½ " "	60 "	3 " "	120 "

ENGINE HOSE, 4-PLY.

Internal Diameter.		Internal Diameter.	
½ inch, per foot,	25 cents.	1¾ inch, per foot,	87 cents.
¾ " "	37 "	2 " "	100 "
⅞ " "	43 "	2¼ " "	112 "
1 " "	50 "	2½ " "	125 "
1¼ " "	62 "	2¾ " "	137 "
1½ " "	75 "	3 " "	150 "

5-ply Hose made to order at an advance of 25 per cent. on prices of 4-ply.

SUCTION HOSE MADE TO ORDER ON SPIRALLY WOUND FLAT GALVANIZED IRON.

¾ inch, per foot,	75 cents.	3 inches, per foot,	400 cents.
1 " "	90 "	3½ " "	490 "
1¼ " "	115 "	4 " "	580 "
1½ " "	150 "	4½ " "	670 "
1¾ " "	190 "	5 " "	760 "
2 " "	230 "	5½ " "	850 "
2½ " "	310 "	6 " "	950 "

SAVE YOUR BELTING, TIME AND MONEY,

BY USING

THE IMPROVED BELT STUFFING.

Belts treated with this preparation will always remain pliable and never become glazed, brittle, crack, or tear out in the lacing holes; they will lie closer to face of Pulleys, thereby avoiding unnecessary strain and the consequent liability of breakage.

This preparation contains no chemicals or ingredients to injure Leather, and is free from Tar or Rosin.

The increased wear derived from a single belt subject to the frequent application of this article more than repays the trifling expenditure involved in its use.

Packed in Tin Cans Neatly Painted. Sized as follows. · Ready for immediate Use.

No. 0,	$0 30	No. 3,	$3 00
" 1	0 40	" 4,	4 00
" 2	1 50	" 5,	6 00

Packed also in Kegs of 30 to 250 lbs. at 25 cents per lb.

DIRECTIONS.—Clean the Belt as far as convenient from Dust and Dirt, and apply the Stuffing with hand or brush.

HAIR AND WOOL FELTING,

FOR COVERING BOILERS AND STEAM PIPES.

The best material to prevent loss of heat by condensation or radiation. It is made of pure hair from half inch to two inches in thickness, backed with wool felting, one-eighth of an inch thick, or with canvass duck tacked and fastened securely to it.

This article is warranted to save twenty-five per cent. in fuel, or many times its cost. It is made in strips six feet wide, and can be cut in any lengths.

Price per Square Foot—All Hair.

½ inch thick, per square foot,	10 cents.
¾ " " " "	15 "
1 " " " "	20 "
1½ " " " "	25 "

Hair with Wool Back, or Hair and Canvass.

½ inch thick, per square foot,	20 cents.
¾ " " " "	25 "
1 " " " "	30 "
1½ " " " "	35 "

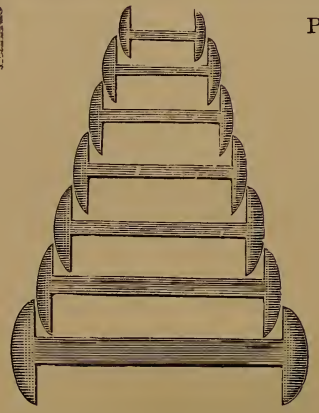
CHARLES REUTER. J. D. MALLORY.

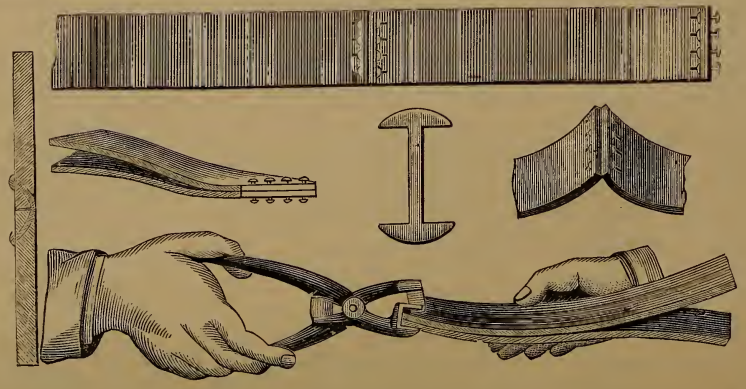
BLAKE'S PATENT BELT STUDS.

The constantly increasing demand for our Belt Studs, from every State in the Union, indicates they are well known to be the *best* fastening for Leather Belts. We also wish to say to our friends that they are the *best* fastening for Rubber Belts. They are not only *stronger*, but more *durable*. Lacing either tears the Belt or soon wears out running over the pulley, often requiring to be re-laced. Studs will last as long as the Belt. Another advantage the Studs have is the simplicity and certainty with which a Belt is fastened. For Studs, first square the ends of the Belt, then make the slit with the tool shown in cut below. Thus fastened the Belt will run even and cannot be slit and spoiled as it often is, by being unevenly laced. Use 00 size for 5 and 6 ply, No. 0 for 4 ply, and other sizes in proportion.

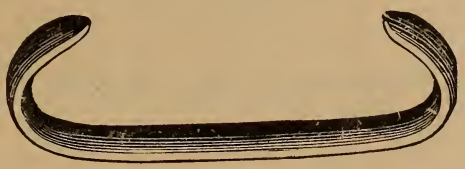
They are packed in boxes of one hundred each, printed directions for applying them on each box.

No.	5	Per Box, $	75
"	4	"	90
"	3	"	1 00
"	2	"	1 50
"	1	"	2 00
"	0	"	2 50
"	00	"	3 00





POINTED BELT HOOKS, MADE OF BEST SWEDES IRON.

		Per Thousand.
No. 4		$10 00
No. 5		8 50
No. 6		7 00
No. 7		5 00
No. 8		4 00
No. 9		3 50
No. 10		3 00
No. 11		2 75
No. 12		2 50
No. 13		2 25
No. 14		2 00

ALL WARRANTED. Per Cent. Discount.

Heavy, Extra Heavy, Light and Extra Light—Price according to Weight.

PATENT BELT TIGHTENER,

FOR

Drawing Belts Together for the Purpose of Lacing Them.

This apparatus has proved itself indispensable to every establishment using belts of six inches wide and upward, and will soon pay its cost in the saving of time in lacing belts, much quicker and better than any other way, and avoids any necessity or excuse for injuring a wide belt by putting it upon the pulleys after it is sewed.

BELT TIGHTENERS.

6 inch,	each,	$15 00
8 "	"	16 00
10 "	"	18 00
12 "	"	20 00
14 "	"	22 00
16 "	"	23 00
18 "	"	25 00
20 "	"	26 00
22 "	"	28 00
24 "	"	30 00
26 "	"	32 00
28 "	"	34 00
30 "	"	35 00

Champion Belt Hook.

No. 1, For Narrow, Light-Running Belts,	$5 00 per 1,000
" 2, Warranted to stand in any Belt not over 4 in. in width,	6 00 "
" 3, " " in Rubber or Leather Belts of any width	8 00 "
For the above a superior Hand Punch is furnished,	1 50 each.

A Drive Punch is also furnished for all the above sizes at 35 cents each.

PURE

OAK LEATHER BELTING.

PRICE LIST PER RUNNING FOOT.

1	inch Belting,	$	06
1¼	" "		09
1½	" "		12
1¾	" "		15
2	" "		18
2¼	" "		21
2½	" "		24
2¾	" "		27
3	" "		30
3¼	" "		33
3½	" "		36
3¾	" "		39
4	" "		42
4½	" "		48
5	" "		54
5½	" "		60
6	" "		66
7	" "		78
8	inch Belting,	$	90
9	" "		1 02
10	" "		1 14
11	" "		1 26
12	" "		1 38
13	" "		1 50
14	" "		1 62
15	" "		1 78
16	" "		1 94
17	" "		2 10
18	" "		2 26
19	" "		2 42
20	" "		2 58
22	" "		2 90
24	" "		3 22
30	" "		4 22

SOLID.

ROUND BANDS.	PER RUNNING FOOT.
⅛ inch,	5 cents.
3/16 "	7 "
¼ "	10 "
5/16 "	12 "
⅜ "	14 "

TWIST.

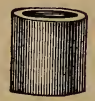
ROUND BANDS.	PER RUNNING FOOT.
⅜ inch,	17 cents.
½ "	19 "
⅝ "	24 "
¾ "	30 "
⅞ "	36 "
1 "	42 "

DOUBLE BELTS, DOUBLE PRICE.

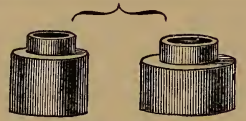
EVERY BELT WARRANTED.

CHARLES REUTER J. D. MALLORY.

FITTINGS FOR WROUGHT IRON PIPE.



Sockets, Plain and Right & Left.



Reducing Sockets.

Bushing.

Shoulder Nipple.

Close Nipple.

Cap.

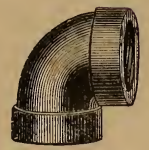
Long Screw.

Hex. Lock Nut.

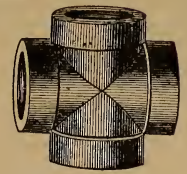
FITTINGS FOR WROUGHT IRON TUBES.

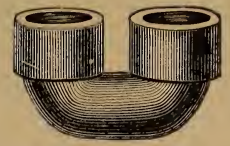
Nominal Diameter—Inches.	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8
Long Screws (not over 10 in. long,)	$ 23	$ 28	$ 31	$ 43	$ 60	$ 70	$1 00	$1 16	$1 60	$2 70	$3 50	$4 90	$6 00	$7 00	$	$	$	$
Sockets	05	06	07	08	13	14	19	22	38	70	1 00	1 36	1 50	2 25	2 50	3 58	9 20	11 95
" Right and Left	.....	07	08	10	15	16	21	27	44	80	1 15	1 65	2 20	....	.....	....	.....	.....
" Reducing,not over two sizes	.....	.....	14	16	20	25	33	40	69	1 20	1 75	2 55	3 60	.....	.....	.....	.....	.....
Lock Nuts	04	04	05	05	07	13	17	20	24	40	58	75	95	1 08	1 15	1 80	6 16	6 65
Nipples (not over 5 in. long,)	07	08	09	10	13	17	23	27	41	70	1 00	1 40	1 90	2 50	3 20	4 90	.....	.....
Cutting off and Cutting Threads	06	07	08	10	12	18	25	32	46	85	1 25	1 60	2 00	3 75	4 75	6 25	.....	.....
Caps	09	10	11	12	16	23	32	42	69	1 16	1 64	2 61	3 03	3 93	5 06	7 20	.....	.....
Bushings	.....	.....	12	13	16	19	23	29	45	72	1 00	1 35	1 85	2 40	3 00	4 30	.....	.....

FITTINGS FOR WROUGHT IRON PIPES.

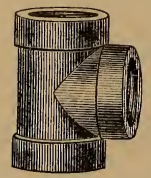

Plain Elbow.


Reducing Tee.

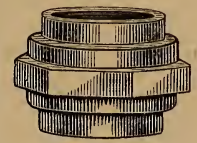

Plain Cross.


Return Bend, open.


Plug.


Plain Tee.


Return Bend, close.

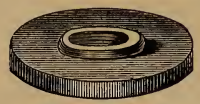

Union.

Inside Dia. of Tube—Inches.	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8
Crosses (Xs,)	$ 13	$ 15	$ 17	$ 22	$ 28	$ 35	$ 52	$ 72	$ 96	$1 90	$2 82	$4 06	$5 00	$6 05	$6 82	10 15	37 00	41 55
Tees (Ts,)	09	10	12	16	22	32	45	60	85	1 50	2 25	3 35	3 90	4 40	5 95	7 95	28 30	32 40
Drop Tees	.....	.....	.....	20	25	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ells (Ls,)	06	07	08	12	15	22	34	44	55	1 00	1 60	2 75	3 00	3 85	4 75	6 85	20 80	24 80
Plugs	04	05	06	07	09	12	16	20	25	40	55	75	1 00	1 25	1 50	2 00	3 00	4 50
Return Bends, Close Pattern, Dis. Cen. to Cen. In	.....	.....	.....	1⅛	1⅜	1 1 1/16	2⅛	2⅜	2 1 5/16	3½	4½	4 1 3/16	5 7/16	6	9⅝	7⅞	.....	.....
Return Bends, Close Pattern, Price	.....	.....	09	12	18	32	45	53	86	1 58	2 12	2 50	3 25	3 80	6 12	7 35	.....	.....
Return Bends, Wide Pattern, Dis. Cen. to Cen. In	.....	.....	.....	1⅝	2	2½	3	3½	4½	5½	6½	7½	8½	9½	11	13	.....	.....
Return Bends, Wide Pattern, Price	.....	.....	12	16	23	35	53	75	1 20	1 80	2 40	3 10	.....	.....	.....	.....	.....	.....
Malleable Iron Unions	.....	45	50	60	80	1 00	1 30	1 60	2 40	3 40	4 75	6 40	.....	.....	.....	.....	.....	.....

GALVANIZED FITTINGS FOR WROUGHT IRON PIPE.

NOMINAL DIAMETER. INCHES.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8
Long Screw, (not over 10 in. long).....	$.....	$ 32	$ 37	$ 51	$ 72	$ 90	$1 25	$1 50	$2 05	$	$.....	$.....	$.....	$.....	$.....	$.....	$.....	$.....
Sockets.....	.....	07	08	10	16	20	24	30	53	95	1 25	1 87	2 10	2 75	3 20	4 95	10 55	14 30
" Right and Left..	.....	08	09	12	18	22	30	35	56	1 05	1 50	2 15	2 40	.....	.....	.....	.....	.....
" Reducing (not over two sizes)..	.....	.....	15	18	23	28	37	45	79	1 34	1 94	.....	.....	.....	.....	.....	.....	.....
Lock Nuts.....	04	04	05	07	10	17	21	25	31	52	80	1 10	1 50	1 70	2 00	2 75	7 50	8 50
Nipples, (not over 5 inches long).....	....	07	10	11	14	19	26	32	48	80	1 15	1 70	2 25	2 95	.....	.....	.....	.....
Cuttting off and Cutting Threads.....	.06	07	08	10	12	18	25	32	46	85	1 25	1 60	2 00	3 75	4 75	6 25	.....	.....
Plugs.....	04	04	06	06	08	11	16	21	32	56	78	1 15	1 35	1 80	2 40	3 30	.....	.....
Caps.....	.....	10	12	14	20	28	40	53	85	1 45	2 10	.....	.....	.....	.....	.....	.....	.....
Crosses, (Xs).....	14	18	22	30	41	53	84	1 14	1 65	3 10	4 37	6 95	8 25	10 25	10 80	16 50	48 00	57 00
Tees, (Ts).....	10	13	16	22	31	50	72	1 00	1 38	2 45	3 75	5 70	6 40	8 25	9 25	14 50	37 00	44 60
Drop Tees.....	.....	.....	.....	26	35	53	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ells, (Ls).....	07	09	11	16	23	35	56	72	1 08	1 85	2 70	4 40	5 05	6 40	8 00	11 75	27 50	34 50
Drop Ells.....	.....	.....	.....	19	27	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Return Bends, Close Pattern.....	.....	.....	15	18	28	53	72	88	1 42	2 60	3 85	4 60	6 00	7 25	12 00	14 50	.....	.....
Return Bends, Wide Pattern.....	.....	.....	16	23	35	56	88	1 25	1 80	3 15	4 60	5 85	.....	.....	.....	.....	.....	.....
Unions.....	.....	.....	.....	75	1 00	1 25	1 60	2 20	2 75	4 00	.....	.....	.....	.....	.....	.....	.....	.....

CAST IRON FLANGES.



Plain Flange.

Oval Flange.

Boss'd Flange.

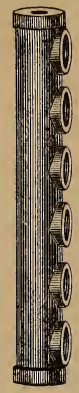
Blank Flange.

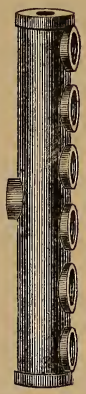
Inside Dia. of Tube. . . Inches.	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	Blank Flanges.
Plain Flanges. Outside Diameter in Inches. 4	$ 25	$ 26	$ 28	$ 29	$ 30	$	$	$	$	$	$	$	$	$	$	$	$	$ 20
4½	30	31	32	33	34	36												25
5	39	41	43	45	47	49												35
5½		48	50	52	54	56	58											48
6		57	59	61	63	65	67	70										57
6½			68	70	72	74	76	79	82									68
7				78	80	82	84	87	91	95								78
7½				88	90	92	94	97	1 01	1 05								88
8					1 01	1 03	1 05	1 08	1 12	1 16	1 20							1 00
8½					1 15	1 18	1 21	1 25	1 32	1 40	1 50							1 15
9						1 35	1 40	1 45	1 50	1 55	1 63	1 75						1 35
9½							1 65	1 70	1 75	1 80	1 90	2 15						1 65
10								1 86	1 96	2 06	2 20	2 35	2 50					1 86
10½									2 20	2 30	2 40	2 55	2 65	2 90				2 10
11									2 50	2 60	2 80	2 90	3 10	3 20				2 50
12										3 10	3 20	3 30	3 40	3 50	3 75			3 10
13											4 65	4 90	5 15	5 40	5 65	5 90		4 50
14												5 50	5 75	6 00	6 25	6 55	6 90	5 40
15													6 80	7 00	7 20	7 50	7 90	6 40
16														7 40	7 65	7 95	8 30	7 50
18															8 90	9 20	9 60	8 75
Oval Flanges, ...	18	20	25	30	38	46	54	65										
Distance C to C, of holes, . . .			2⅝	3⅛	3¾	4⅜	5	5¾										
Bossed Flanges, to suit standard Flanges, on iron valves & cocks						90	1 05	1 20	1 35	1 50	1 82	2 10		3 20	4 05		9 00	
Diameter of do.—Inches, . .						5	5½	6	7	7½	8	9		10	11		14 00	

SUPPORTS FOR TUBE.

Number of Hooks,	1	2	3	4	5	6	7	8	10	12	14	16
Hook and Expansion Plates, ¾ inch,	$ 15	$ 17	$ 20	$ 24	$ 32	$ 35	$ 39	$ 43	$	$	$	$
" " " 1 "	17	22	26	37	43	47	54	60				
" " " 1¼ "	19		1½ No. 1, 20		2 in. No. 1, 27		2½ No. 1, 35		3 in. No. 1, 60			
Moveable Hook Plates, ¾ "		1 00		1 60		2 45		3 25	3 85	4 60	5 40	
" " 1 "		1 10		1 80		2 70		3 60	4 25	5 40	6 00	
Rosette Plates, ¾ "		28		58		80		90	1 00	1 25		
" " 1 "		30		62		82		1 10	1 30	1 60		
Coil Stands, per pair, ¾ pipe,		36		52		68		84	1 00	1 16	1 32	1 40
" " " 1 "		43		62		85		1 05	1 45	1 70	1 80	1 95
Inside Diameter of Tube. Inches,	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Expansion Hangers single, not over 1 foot of rod,				34	38	48	52	68	70	1 00	1 25	1 50
" " double, " " "				42	49	65	72	98	1 05	1 50	1 95	2 15
Gas Pipe Hooks, per hundred,	75	75	75	1 00	1 25	1 50	2 00	2 50				

MANIFOLDS.

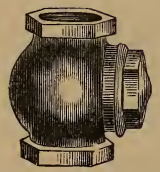




Number of Outlets,		2	3	4	5	6	7	8	10	12	14	16	18	20
For ¾ in. Tube, 2 in. centre to centre,	1¼ Body,	$ 58	$ 76	$1 05	$1 25	$1 50	$1 70	$1 85	$2 12	$2 70	$	$	$	$
	1½ "	80	1 02	1 25	1 45	1 70	1 90	2 25	2 80	2 95	3 40	4 35	4 85	5 40
	1¾ "	76	1 00	1 25	1 50	1 80	2 00	2 20	2 85	3 10				
For 1 in. Tube, 2½ in. centre to centre,	1½ "	88	1 15	1 45	1 90	2 00	2 25	2 55	3 45	4 15				
	2 in. "	1 26	1 65	2 00	2 25	2 60	2 95	3 15	4 12	4 80	5 20	6 00	7 40	8 30
	3 in. "				4 20	4 85	5 50	6 20	7 60	9 00	10 40	11 80	13 20	14 60

Manifolds are tapped right-handed unless ordered different, and have the hole in one end same size as outlets; other end same as body.

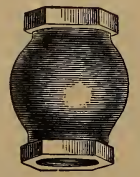
When ordering back or side outlets to Manifolds accurate description must accompany the order, and will be charged according to size.



CHECK VALVES,

HORIZONTAL, VERTICAL OR ANGLE.

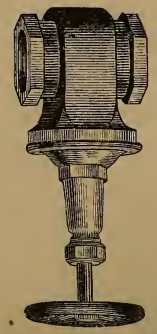
BRASS.



½	¾	1	1¼	1½	2	2½	3
$1 35	$2 00	$2 85	$3 90	$5 00	$7 65	$15 00	$22 00

IRON BODIES—BRASS MOUNTED.

Size, ...	1	1¼	1½	2	2½	3	3½	4	5	6
Price, Screw Ends, . . .	$3 25	$3 75	$4 75	$6 25	$12 60	$16 00	$19 50	$27 00	$36 00	
" Flange " . . .		4 25	5 75	8 30	14 50	17 50	22 00	29 00	38 00	$51 00



PEET VALVES, (Straight Open.)

Inches, ...	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	7	8
	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$
Brass, screw ends, .	1 50	1 55	2 35	3 35	4 60	6 00	9 00	15 00	22 00						
" flange " .							18 00	25 00	32 00						
Iron with flanges, brass mounted, .								16 00	20 00	24 00	28 00	34 00	40 00	55 00	60 00

LUDLOW'S PATENT VALVES.

IRON—BRASS MOUNTED.

☞Screw Socket and Flange have Brass Nut and Gland to Packing Box, in first six sizes.

These Valves from 3 to 5 inch inclusive, will bear heavy pressure either side of Gate.

SIZE.	Diameter of Standard Flange.	Measurem't from face to face of Flanges.	Measurem't from end to end of Hubs.	Measurem't from face to face of Screw Sock't	BRASS MOUNTED. Screw Socket.	BRASS MOUNTED. Spigot Flange, or Hub.	ALL IRON. Screw Socket.	ALL IRON. Spigot Flange, or Hub.
2½ inch	7 inch.	6⅛ inch.		5½ inch.	$12 00	$13 00	$11 50	$12 50
3 "	8 "	8⅜ "	10¾ inch.	8¼ "	16 00	17 00	15 00	16 00
3½ "	8½ "	8⅝ "		8 "	20 00	21 00	19 00	20 00
4 "	9 "	9⅝ "	11⅝ "	8¼ "	23 00	24 00	21 50	22 50
5 "	10 "	10¾ "	12 "	10¾ "	30 00	30 00	28 00	28 00
6 "	11 "	11⅛ "	12½ "	11 "	36 00	36 00	34 00	34 00

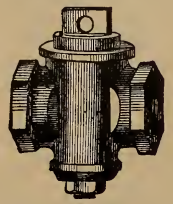
				HUB. FLANGE OR SPIGOT. Brass Mounted.	All Iron.	Indicator.	Standard and Indicator.
8 inch.	13 inch.	11 inch.	14¼ inch.	$52 00	$48 00	$5 00	$15 00
10 "	16 "	12⅝ "	14 "	65 00	60 00	5 25	16 00
12 "	18 "	12¾ "	14¼ "	80 00	75 00	5 50	16 00
14 inch.	20 inch.	13¾ inch.	15¼ inch.			$6 00	$17 00
16 "	22 "	13¾ "	15¼ "			6 50	17 00
18 "	24 "	14 "	15½ "			7 00	18 00
20 "	26 "	14 "	15½ "			7 50	18 00
24 "	30 "	14 "	15¾ "			8 50	19 00
30 "	36 "		19 "				

TO BEAR EXTRA HEAVY PRESSURE EITHER SIDE OF GATE.

	Diameter of Standard Flange.	Measurem't from face to face of Flanges.	Measurem't from end to end of Hub	
6 inch Iron, Brass mounted, single gate.	11 inch.	11 inch.	13⅛ inch.	$39 00
7 " " " " " "	12 "	11¼ "	13⅞ "	45 50
8 " " " " " "	13 "	11 "	14½ "	52 00
4 " " " " double gate.	9 "	9⅝ "	11⅝ "	28 00
6 " " " " " "	11 "	11 "	13⅛ "	42 00
8 " " " " " "	13 "	13¼ "	13⅝ "	56 00
10 " " " " " "	16 "	14¾ "	15½ "	70 00
12 " " " " " "	18 "	15 "	15½ "	95 00
14 " " " " " "	20 "	13¾ inch.	15½ inch.	
16 " " " " " "	22 "	16 "	15¾ "	
18 " " " " " "	24 "	16½ "	15¾ "	
20 " " " " " "	26 "	17¾ "	16½ "	
24 " " " " " "	30 "	20½ "	22 "	
30 " " " " " "		22½ "	23¼ "	
36 " " " " " "				

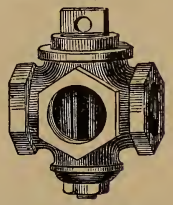
BRASS STOP COCKS.

111



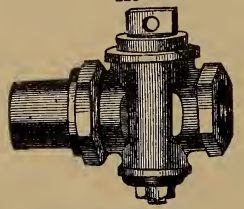
Stop Cock, scr'd.

113



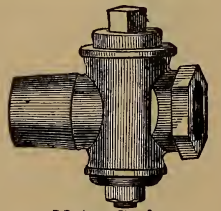
3-way Cock, scr'd.

115



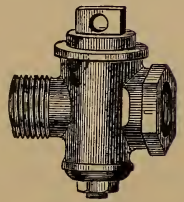
Cock, with union.

117



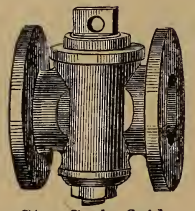
Meter Cock.

119



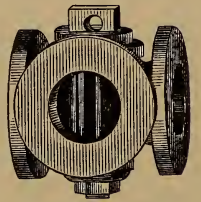
Stop Cock.

112



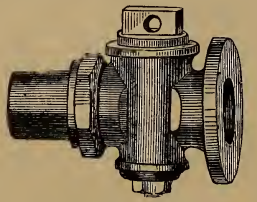
Stop Cock, fig'd.

114



3-way Cock, fig'd.

116

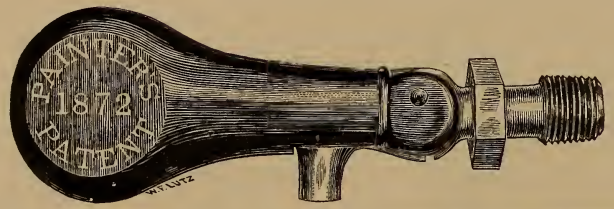


Cock, with union.

DIAMETER OF OPENINGS, ... INCHES,	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
	$	$	$	$	$	$	$	$	$	$	$	$	$
111, 119, 120. Steam Stop Cocks—Screwed ends, . .	95	1 05	1 25	1 60	2 35	3 50	4 80	6 25	9 50	18 00	25 00		
112, " " " Flanged " . .				3 40	4 60	6 40	8 55	11 50	15 50	30 00	42 50		
113—Three-way Stop Cocks. Screwed " . .		1 50	1 65	2 00	2 80	4 15	5 80	7 60	12 00	21 00	32 00		
114, " " " Flanged " . .							11 50	15 50	21 00	39 00	59 00		
115—Stop Cocks. Union one end, ...		1 35	1 60	2 05	2 90	4 35	5 85	7 50	11 10	20 75	31 50		
116 " " " " fig'd other end, .						6 80	7 75	10 15	14 10	27 00	40 50		
117, 118—Meter and Service Cocks, ...		60	75	1 00	1 60	2 35	3 50	4 50	7 00				
115, " Cocks, with Union, ...				1 40	2 05	2 90	4 25	5 75	9 10				
121—Iron Pipe Stop Cock, ...						3 50	5 00	6 50	10 90				
Dia. of Flanges on Brass Cocks, ...				3	3 1/2	4	4 1/2	5	5 1/2	6 1/4	7		
Length of Cock. . . . . Inches,				2	2 1/2	3	3 9-16	4	5	6	7		

PLUMBERS' BRASS.

INCHES,		¼	⅜	½	⅝	¾	1	1¼	1½	2
Bib Cocks, Finished,	.....	$1 25	$1 25	$1 50	$1 75	$2 25	$3 25	$4 75	$6 00	$10 50
Bib Cocks, Rough,	.....	1 00	1 00	1 40	1 50	1 75	2 25	4 50	5 25	9 00
Hose Bibs, Finished,	.....	.....	.....	1 90	2 25	2 75	3 50	5 50	.....	.....
Hose Bibs, Rough,	.....	.....	.....	1 50	2 00	2 50	3 25	5 00	6 00	.....
Wash Tray Bibs, Finished,	.....	.....	1 00	1 25	1 75	2 50	3 25	.....	.....	.....
Compression Bibs,	.....	.....	.....	1 75	2 00	2 50	.....	.....	.....	.....
Stop and Waste Cocks, Finished,	.....	1 25	1 35	1 60	1 75	2 25	3 50	6 00	6 50	.....
Stop and Waste Cocks, Rough,	.....	1 10	1 20	1 40	1 60	2 00	2 50	4 50	5 50	.....
No.		**1**	**2**	**3**	**4**	**5**				
Basin Cocks, Brass,	.....	1 75	2 00	2 50	3 50	4 00	.....	.....	.....	.....
Basin Cocks, Silver Plated,	.....	3 00	3 50	4 00	4 50	5 00	.....	.....	.....	.....
Hose Pipe, with Cock,	.....	.....	.....	3 00	.....	3 50	4 00	6 00	.....	.....
Hose Pipe, without Cock, long,	.....	.....	.....	2 00	.....	2 50	3 25	4 25	5 25	6 00
Hose Pipe, without Cock, short,	.....	.....	.....	1 25	.....	1 50	2 00	2 50	3 50	.....
Sprinklers to fit Pipe,	.....	.....	.....	75	.....	75	1 00	.....	.....	.....
Hose Couplings,	.....	.....	.....	75	.....	1 00	1 25	1 75	2 50	3 50
Basin Plugs and Couplings, Brass,	.....	.....	.....	1 00	.....	1 00	1 25	.....	.....	.....
Basin Plugs and Couplings, Electro-plated,	.....	.....	.....	1 50	.....	1 50	1 75	.....	.....	.....



GAUGE COCK.

(PAINTER'S PATENT,)

Price, 1-2 or 3-4, $1.75 each.

Regester's Patent Gauge Cock.

With Iron Ball, ½ or ¾ inch - - - - $2 00

" Brass Ball, ½ or ¾ inch, - - - 2 50

GAUGE COCKS—WOOD HANDLES.

Size,	⅜	½	¾
Single Seat,	2 00	2 50	3 00
Double Seat.	2 50	3 00	3 55

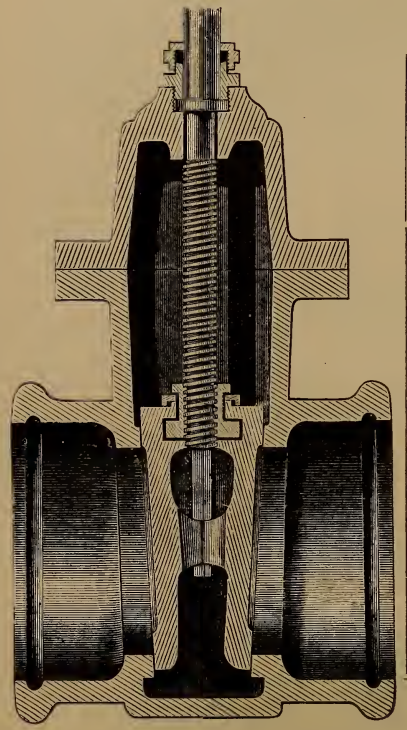
IRON COCKS.

Diameter of Openings. . . . Inches,	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
122. Stop Cocks. Screwed ends,	$1 00	$1 20	$1 45	$1 85	$2 35	$3 90	$6 00	$ 9 00	$13 00	$18 00	$35 00	$60 00
123. " Flanged "				2 75	3 90	5 95	8 75	12 50	17 25	23 00	42 00	68 00
124. 3-way Cocks. Screwed "			2 00	2 55	3 15	4 90	7 50	11 05	16 00	22 00	40 00	67 00
125. " Flanged "				3 85	5 10	7 45	11 85	16 30	22 40	29 50	49 00	75 00
126. Bell and Spiggot-end St'p Cocks						4 50	7 50	10 50	14 75	21 00		

IRON COCKS—BRASS PLUGS.

122. Stop Cocks. Screwed ends,	$1 25	$1 50	$2 00	$2 75	$3 75	$6 20	$10 25	$16 70	$23 60	$34 10	$69 00	
123. " Flanged "				3 65	4 30	8 25	13 00	20 20	27 85	39 50	76 00	
124. 3-way Cocks. Screwed "			2 60	3 45	4 55	7 20	11 75	18 75	27 00	40 00	76 00	
125. " Flanged "				4 75	6 50	9 75	16 10	24 00	33 40	47 50	85 00	
126. Bell and Spigget-end St'p Cocks						6 80	11 75	18 20	25 35	37 00		
Diameter of flanges on iron cocks, Inches, ...				5	5½	6	7	7½	8	9	10	11
Length of Cock.				4	4½	5⅝	6⅝	7¾	9⅛	10½		

Improved Water Gates and Gas Valves.



	Diameter of Standard Flange.	Measurement from face to face of Flange.	Measurement from end to end of Hubs.	Measurement from face to face of Screw Socket.	Brass Mounted.		All Iron.	
					Screw Socket.	Spigot Flange or Hub.	Screw Socket.	Spigot Flange or Hub.
2½ in.	7 in.	6⅜ in.	.....	6 in.	$12 00	$13 00	$11 50	$12 50
3 "	8 "	6½ "	9⅞ in.	6½ "	16 00	17 00	15 00	16 00
3½ "	8½ "	6½ "	.....	6½ "	20 00	21 00	19 00	20 00
4 "	9 "	8½ "	12 "	8½ "	23 00	24 00	21 50	22 50
5 "	10 "	8½ "	.....	9 "	30 00	30 00	28 00	28 00
6 "	11 "	9¾ "	13½ "	9¾ "	36 00	36 00	34 00	34 00
8 "	13 "	10⅛ "	13½ "	.....	.....	52 00	.....	48 00
10 "	16 "	10¾ "	15½ "	.....	.....	74 00	.....	70 00
12 "	18 "	11 "	16 "	.....	.....	96 00	.....	90 00
14 "	20 "	.....	.....	.....	.....	.....	.....	.....
16 "	22 "	.....	.....	.....	.....	.....	.....	.....
18 "	24 "	.....	.....	.....	.....	.....	.....	.....
20 "	26 "	.....	.....	.....	.....	.....	.....	.....
24 "	30 "	.....	.....	.....	.....	.....	.....	.....
30 "	33 "	.....	.....	.....	.....	.....	.....	.....

Direct Iron Valves—Brass Mounted,

WITH BEST COMPOSITION.

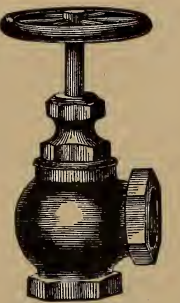
These Iron Body Valves are all suitable for either Water, Steam or Gas, as we bore out the body and turn and press into their places the Composition Seats. The Valves are all made with Composition Faces and Composition Seats, Screw and Nut, and are all proved by hydraulic pressure. The Water and Gas Valves may have handle Wheels, or the top of the Screw may be square to turn with a wrench. We make the following sizes to screw for Iron Pipe, 2½ inch, 3 inch, 3½ inch, 4 inch, 5 inch, 6 inch. In ordering these Valves, whether Bell, Flange, Spigot or Screw, hand wheel or to turn with wrench, should be mentioned. They are all double gate, will bear extra heavy pressure either side of gate.

	Diameter of Stan'd Flange.	Measurement from face to face of Flange.	Measurement from face to face of Screw Socket.	Screw Socket.	Flange.
2½ inch.	7 inch.	6⅜ inch.	6 inch.	$12 00	$13 00
3 "	8 "	6½ "	6½ "	16 00	17 00
3½ "	8½ "	7½ "	7½ "	20 00	21 00
4 "	9 "	8½ "	8½ "	23 00	24 00
5 "	10 "	9½ "	9½ "	30 00	30 00
6 "	11 "	9¾ "	9¾ "	36 00	36 00
8 "	13 "	10½ "			52 00
10 "	16 "	14 "			74 00
12 "	18 "	17 "			96 00

☞Direct Valves all Iron same sizes and styles as above.☜

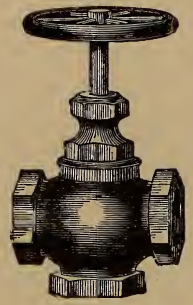
BRASS GLOBE VALVES—SCREWED ENDS.

131. Globe Valve.

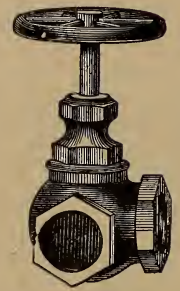


132. Angle Valve.

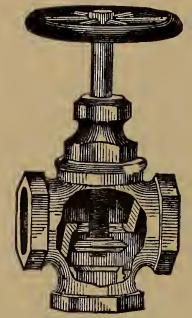
133. Cross Valve.



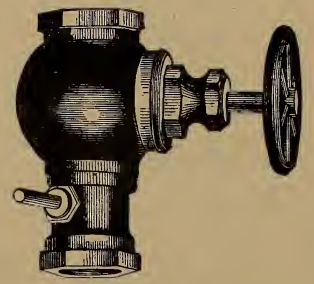
134. Corner Valve.



135. Three-way Valve.



136. Stop and Throttle Valve.



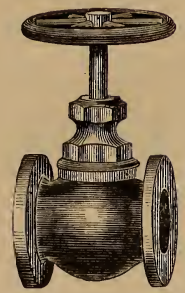
Diameter of Openings. . . . . Inches,	¼	⅜	½	¾	1	1¼	1½	2	2½	3
131, 132, Globe and Angle Valves, ...	$1 05	$1 25	$1 60	$2 35	$3 50	$4 80	$6 25	$9 50	$18 00	$25 00
133, 134, Cross and Corner Valves, ...	1 45	1 70	2 05	2 80	4 00	5 40	7 00	11 00	20 00	28 00
135, Three-way Valves, ...					7 80	10 25	13 75	18 60	24 00	33 60
136, Stop and Throttle Combined Valve, ...					9 00	11 00	15 00	22 00		

IRON GLOBE VALVES—SCREWED ENDS.

Diameters of Openings. . . . . Inches,	1	1¼	1½	2	2½	3
151, 152, Globe and Angle Valves, ...	$2 75	$3 75	$4 75	$6 95	$11 60	$16 00
153, 154, Cross and Corner Valves, ...	3 30	4 40	5 60	8 25	13 40	18 75
155, Three-way Valves, ...		6 00	8 00	11 25	17 50	24 00
156, Stop and Throttle Combined Valve, ...			9 50	13 90	20 00	26 00

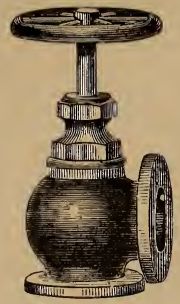
BRASS STOP VALVES--Flanged Ends.

137.



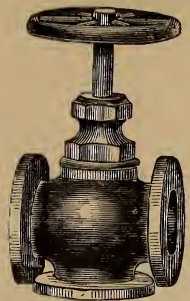
Globe valve.

138.



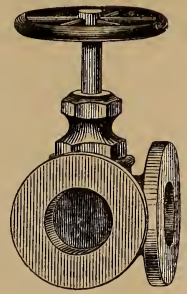
Angle valve.

139.



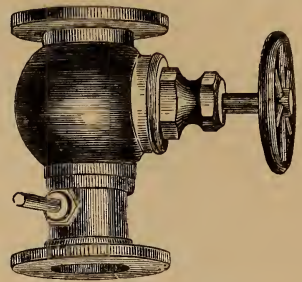
Cross valve.
Also, 3-way valve.

140.



Corner valve.

141.



Stop and Throttle valve.

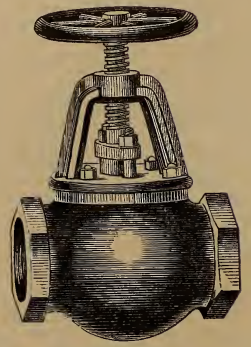
Diameter of Openings, ... Inches,	½	¾	1	1¼	1½	2	2½	3
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
137, 138, Globe and Angle Valve, ...	3 40	4 60	6 40	8 55	11 50	15 50	30 00	42 00
139, 140, Cross and Corner Valve, ...		6 00	8 35	10 50	14 85	20 00	38 00	54 25
139, Three-Way Valve, ...				15 35	21 60	27 60	42 00	60 00
141, Stop and Throttle Combined Valve, ...			12 00	15 00	20 50	27 00		
Diameters of Flanges on Brass Valves, ... Inches,	3	3½	4	4½	5	5½	6¼	7
Length of Globe and Cross Valves, ... "	2 3-16	2⅝	3¼	3¾	4¼	5⅛	6¼	7

IRON STOP VALVES--Flanged Ends.

Diameter of Openings, ... Inches.	1¼	1½	2	2½	3
	$ c.	$ c.	$ c.	$ c.	$ c.
Globe and Angle Valves, ...	4 50	6 00	9 00		
Cross and Corner "			11 25	17 50	24 00
Three-way Valve, ... (See Fig. 135.) . .	7 50	10 00	14 75	21 00	27 50
Stop and Throttle Valve Combined, ...		10 50	15 00	21 00	28 00
Diameters of Flanges on Iron Valves, ... Inches,	5	5½	6	7	7½
Length of Valve, ... "	4⅜	5⅛	6½	7⅝	8¾

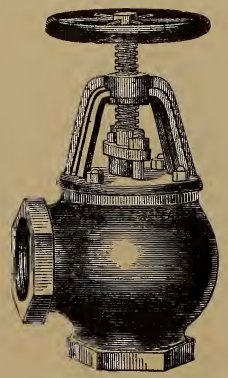
IRON STOP VALVES—SCREWED ENDS, (Continued.)

157.



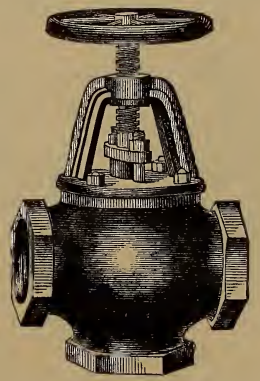
Globe Valve.

158.



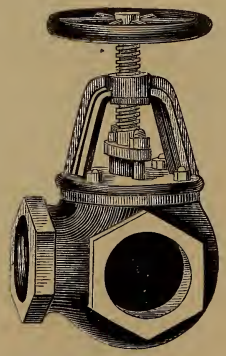
Angle Valve.

159.



Cross Valve. Also, 3-way Valve.

160.



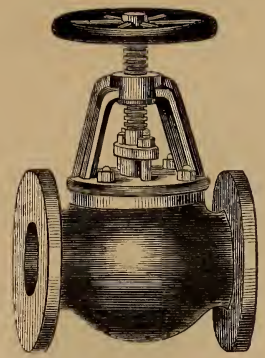
Corner Valve.

Diameter of Openings. . . . . Inches,	3	3½	4	5	6
157, 158. Globe and Angle Valves, ...	$	$22 50	$30 00	$40 00	$55 00
159, 160. Cross and Corner "		25 00	33 00	44 00	60 00
159. Three-way Valve, (See Fig. 135.)		30 00	39 60	52 00	70 00

Valves with screwed ends are not usually made smaller than 3½ inches, with outside stem screws and yokes, although they can be, if so wanted.

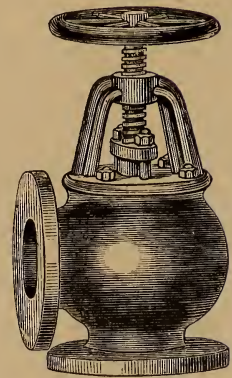
IRON STOP VALVES—FLANGED ENDS, (Continued.)

167.



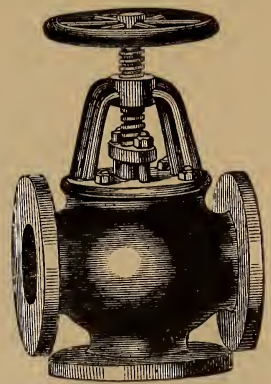
Globe Valve.

168.



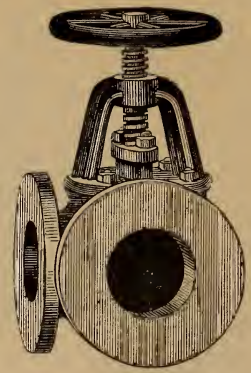
Angle Valve.

169.



Cross Valve. Also, 3-way Valve.

170.

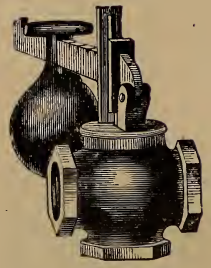


Corner Valve.

Diameter of Openings. . . . . Inches,	2½	3	3½	4	5	6	8	10	12
167, 168. Globe and Angle Valves, ...	$16 00	$19 50	$24 00	$33 00	$43 00	$58 00	$94 00	$133 00	$264 00
169, 170. Cross and Corner Valves, ...	18 50	22 50	29 00	37 00	48 00	63 00	115 00	155 00	290 00
169. Three-way Valve. (See Fig. 135.)	22 50	27 00	35 00	44 50	58 00	75 00	138 00	186 00	350 00
Diameter of Flanges. . . . . Iron Valves,	7	7½	8	9	10	11	14	16	19
Length of Valves. . . . . Inches, .	7⅝	8¾	9⅝	10½	12⅛	13¾	18⅛	23	26¾

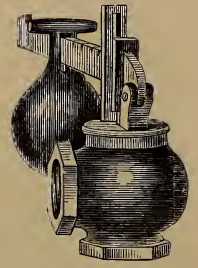
SAFETY VALVES, BRASS AND IRON—Screwed Ends.

171



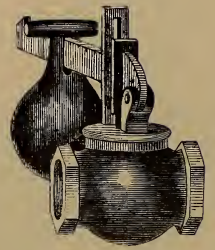
Globe Safety Valves.

172



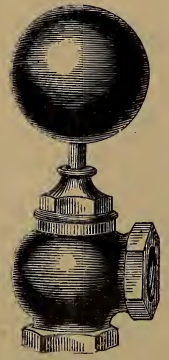
Angle Safety Valves.

173



Horizontal Safety Valve.

174

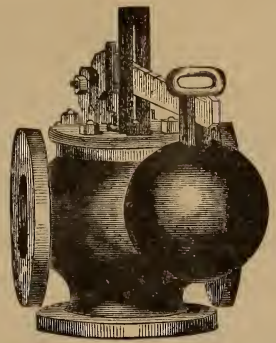


Angle Pressure Valve, loaded to 5 lbs.

Diameter of Openings, . . Inches,		½	¾	1 .	1¼	1½	2	2½	3	3½	4	5	6	8
Brass.	171, 172, 173. Safety Valves—Globe, Angle and Horizontal, .	$2 60	$3 55	$4 75	$6 50	$8 75	$14 00	$20 75	$	$	$	$	$	$
	174. Angle Valves, loaded to 5 lbs.	2 15	2 85	4 00	5 50	7 25	12 00	17 50						
Iron.	171, 172, 173. Safety Valves—Globe, Angle and Horizontal, .			4 00	5 00	6 50	10 00	17 50	25 00	32 50	41 00			
	174. Angle Valves, loaded to 5 lbs.			3 50	5 00	7 00	10 00	13 00	20 00					

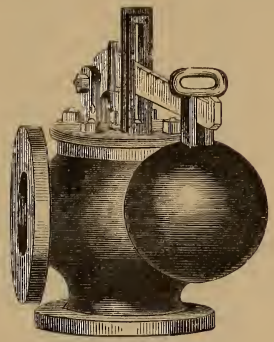
SAFETY VALVES, BRASS—Flanged Ends.

175.



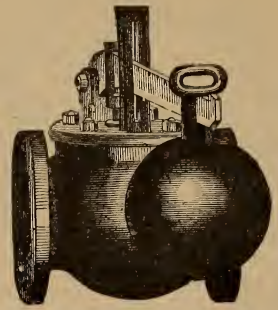
Globe Safety Valve.

176.



Angle Safety Valve.

177.



Horizontal Safety Valve.

Diameter of Openings. . . . Inches,		1	1¼	1½	2	2½	3	3½	4	5	6	8
Brass.	175, 176, 177. Safety Valves, Globe, Angle and Horizontal.	$9 18	$12 25	$16 75	$23 00	$39 00						
Iron.	175, 176, 177. Safety Valves, Globe, Angle and Horizontal.				12 50	22 50	28 00	35 00	43 00	57 50	72 50	132 00

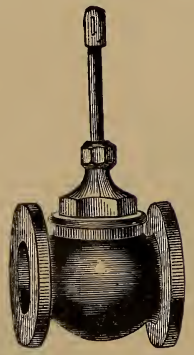
Dimensions of Safety Valves same as Stop Valves of corresponding sizes.

Brass Balance, Throttle and Vacuum Valves.

191

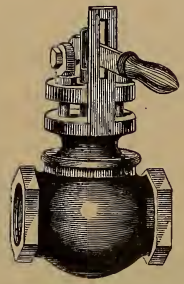
Balance Governor Valve, screwed.

192



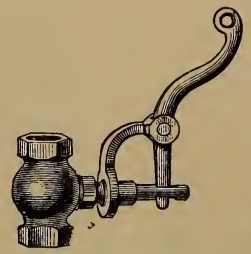
Balance Governor Valve, flanged.

193



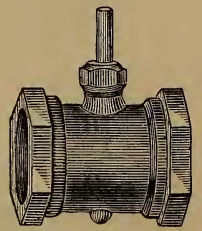
Balance Stop Valve, screwed ends.

194



Whistle Valve.

195



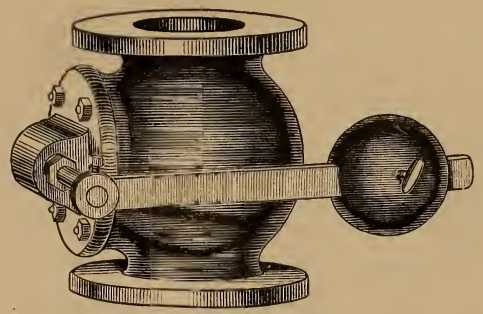
Throttle Valve, screwed ends.

Diameter of Openings, ... Inches,	½	¾	1	1¼	1½	2	2½	3	
191. Balance Governor Valves, screwed ends, ...			$4 00	$5 25	$7 00	$13 00	$19 50	$	$
192. " " " flanged "				9 00	12 50	19 50	31 50		
193. Balance Stop Valves, screwed "				14 00	17 00	22 00	32 00		
" " " flanged "				17 75	22 50	28 50	44 00		
194. Whistle Valves, screwed "	$2 75	$3 75	5 00	6 75	9 00	15 00			
195. Throttle Valves, " "			3 50	4 80	6 25	9 50			
196. Vacuum Valves, " " , ...	1 85	2 20	3 15	4 25					

Dimensions of Balance and Whistle Valves same as Stop Valves of corresponding sizes.

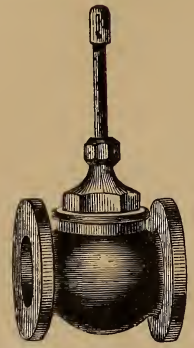
IRON BALANCE, THROTTLE, BACK PRESSURE & TRANSFER VALVES.

206.



Back Pressure valve.

201.

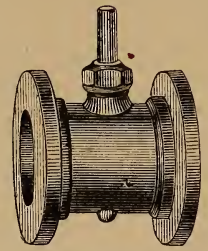


Balance Gov. valve, fig'd.

205.

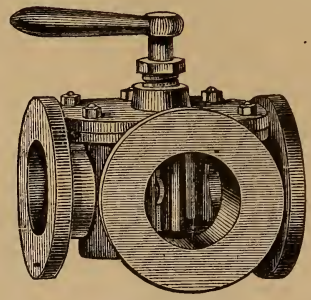
Throttle valve, To go in flanged joint.

203.



Throttle valve, fig'd.

207.



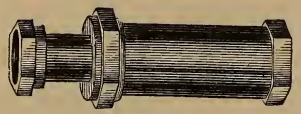
Transfer valve.

Diameters of Openings, ... Inches,	1	1¼	1½	2	2½	3	3½	4	5	6	8
Balance Governor Valves (See Fig. 191.) . Screwed ends.		$4 50	$6 00	$10 50	$15 75	$	$	$	$	$	$
201. do. do. do. . . . . Flanged "		5 40	7 35	12 65	18 75						
Balance Stop Valves. (See Fig. 193.) . . . Screwed "			16 00	19 50	28 25						
do. do. do. do. . . . Flanged "			17 50	21 50	32 75						
Throttle Valves. (See Fig. 135) . . . . . Screwed "			4 75	6 95	10 00	12 00	14 00	17 00	20 00		
203. do. do. . . . . Flanged "			5 75	7 50	11 00	13 00					
205. do. do. to go in flanged joints, ...				7 50	9 00	12 00	14 00	16 50	19 00		
Back Pressure Valves, ... Screwed ends.				16 00	19 00	23 00	31 00	35 00	45 00		
206. do. do. . . . . Flanged "				17 50	21 50	26 00	34 00	38 00	49 00	64 00	116 00
Transfer Valves, to control exhaust steam, . . Screwed "				12 00	14 00	15 50		21 50	5½ in.	7 in.	
207. do do. do. do. . . Flanged "				14 00	16 00	18 00		24 00	37 00	50 00	
Diameter of Flanges on Transfer Valves, ...				5½	6	7		8	9½	11	

Dimensions of Balance and Back Pressure Valves same as Stop Valves of Corresponding sizes.

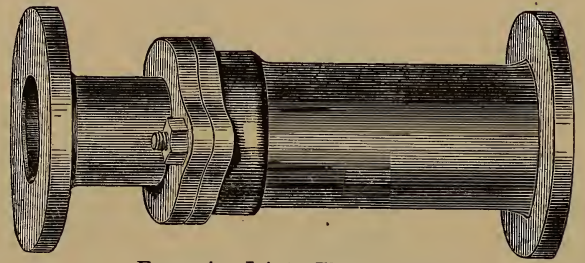
Unions, Expansion and Swing Joints.

211.



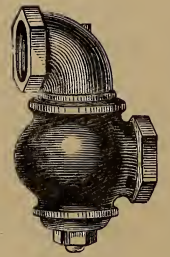
Expansion Joints. Scr'd Ends.

212.



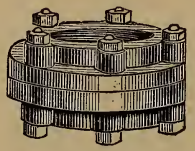
Expansion Joint. Flanged Ends.
Iron body. Brass sleeve.

213.



Swing Joint.

215.

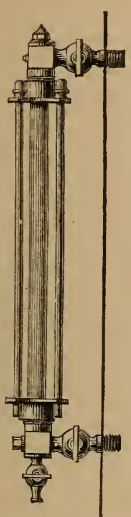


Flanged Union.

Diameter of Openings, ... Inches,			¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Brass.	211. Brass Expansion Joints. Scr'd ends,		$	$	$2 10	$2 90	$4 10	$5 80	$8 20	$	$	$	$	$	$	$	$
	Traverse of do. Inches,				1½	1¾	2	2½	2¾								
	213. Brass Swing Joints. Scr'd ends,				2 00	2 50	3 50	4 90	6 50	11 00							
Iron.	211. Expansion Joints Brass Sleeve. "							3 25	4 50	7 50	11 15	15 60					
	Traverse of do. Inches,							2½	2¾	4	5	6					
	212. Expans'n Joints brass sleeve, fl'gd ends,											25 00	30 50	34 00		46 00	60 00
	Six inch Traverse, ...											30 00	35 00	40 00		55 00	70 00
	Ten " "											3 75	4 50	5 50	6 00	6 50	
	215. Flanged Unions, including Bolts, . .								2 00	2 35	3 00	5⅞	6¾	7½	8¼	9	
	Diameter of Flanges, . . Inches,								4⅜	4⅞	5⅜						

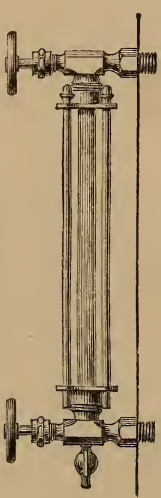
BRASS WATER GAUGES.

COMPLETE.



No. 0.
Brass Cock,
Four Guards.

Price, - - $6.00



No. 1.
Iron Wheel,
Four Guards.

Price, - - $7.00

No. 2.
Brass Wheel.
Two Guards.

Price, - - $9.00

No. 3 Water Gauge, Wood Wheel, two Guards, ... $10.00

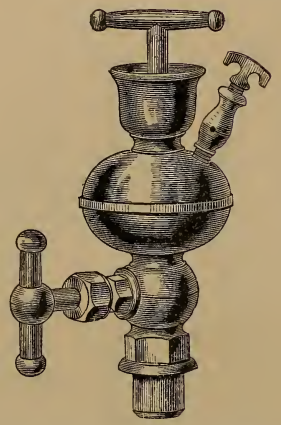
SCOTCH GLASS TUBES.

FOR WATER GAUGES.

Length of Glass, inches, . .	10	11	12	13	14	15	16	17	18	19	20	22	24	30	36
Price $\frac{5}{8}$ in. outside diam., each	40	40	45	45	50	55	60	65	70	75	80				
" $\frac{3}{4}$ in. " " "			55	55	60	60	65	70	75	80	85	95	1 05	1 50	
" $\frac{7}{8}$ in. " " "													1 50	2 00	2 50
" 1 in. " " "													2 00	2 60	3 25

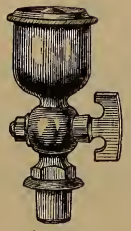
$\frac{1}{2}$ inch Tubes same price as corresponding lengths of $\frac{5}{8}$ inch.

OIL AND TALLOW CUPS.

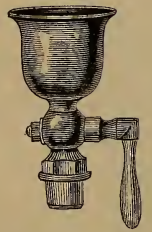


Double Oil Globe, with valves.

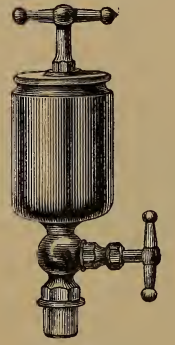
Plain Oil Cup.



Oil Cup with cock.



Open Top Oil Cup, with cock.

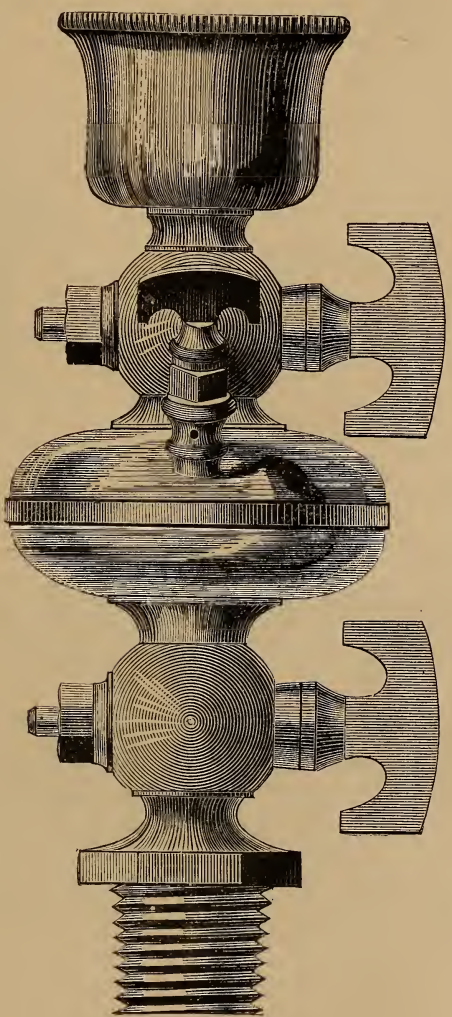


Tallow Cup, with valve.

Outside Diameter of Globes, . . . Inches,	½	⅝	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8
Plain Oil Cups, ...	$ 65	$ 70	$ 75	$ 90	$ 1 10	$ 1 35	$ 1 75	$ 2 40	$	$	$	$	$	$
Oil Cups with Cocks, ...				1 90	2 40	2 85	3 50	4 30						
Open Top Oil Cup, with Cock, ...					2 20	2 60	3 25	4 00	5 25					
Double Oil Globe, with Valve, ...						4 00	4 95	6 30	7 70	9 35	11 00	14 30		
Tallow Cup, with Valve, ...						4 50	5 55	7 00	8 50	10 30	12 25	15 85		
Tube size of Shanks on the above, . Inches,	⅛	⅛	¼	⅜	⅜	⅜	½	½	¾	¾	1	1¼		

DOUBLE GLOBE OIL CUPS.

WITH AIR COCK.



No. 1, Full Size.

Inches.	1½	2	2½	3	3½	4	5
	$4 50	$6 00	$7 50	$8 50	$10 00	$12 00	$15 00

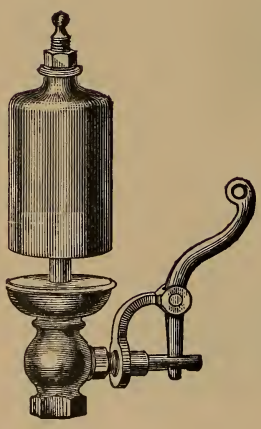
STEAM WHISTLES.

PLAIN.

Diameter of Bell,	1½	2	2½	3	3½	4	5
Size of Pipe, . .	⅜	½	½	¾	¾	1	1¼
Price, ...	$4 00	$5 50	$7 50	$10 00	$13 00	$16 00	$23 50

STEAM WHISTLES.

WITH VALVE.

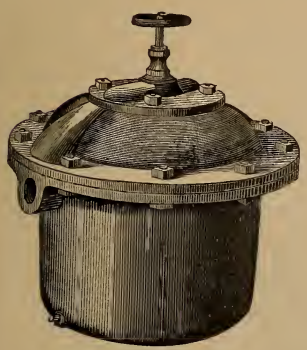


Diameter Bell.	1½	2	2½	3	3½	4	5
Size Pipe,	⅜	½	½	¾	¾	1	1¼
Price, . .	6 50	8 50	11 00	13 50	17 00	21 00	30 00

Glue Heaters and Steam Traps.

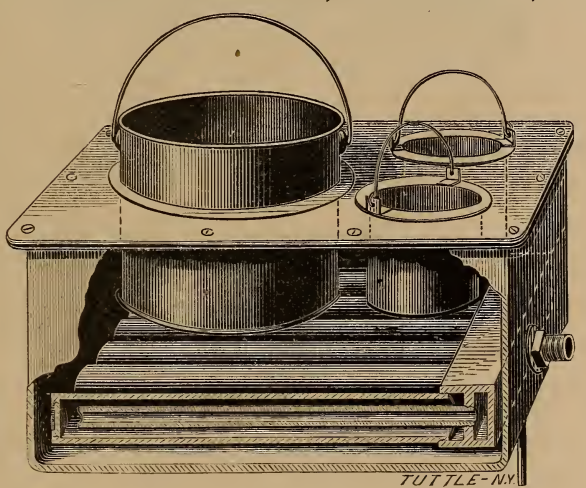
NASON IMPROVED STEAM TRAP.

For taking off the Water of Condensation from Steam Pipes, Coils and Apparatus employed in Steam Heating and Evaporating.



No. of Steam Trap.	Size of Pipe Connections.	Diameter of Cylinder.	Height to Top of Cover.	Greatest number of sq. feet of surface to which it should be applied.	Price.
	inch.	inch.	inch.		
1	$\frac{3}{4}$	8	8	350	$16 00
2	$\frac{3}{4}$	$10\frac{1}{2}$	10	900	20 00
3	1	12	12	1,400	27 50
4	$1\frac{1}{4}$	14	14	2,000	35 00
5	$1\frac{1}{2}$	18	$15\frac{1}{2}$	3,500	65 00

IMPROVED STEAM HEATER, FOR GLUE, PASTE, &c.



	No. 1.	No. 2.	No. 3.
Size of Cover,	11 in. x $15\frac{1}{2}$ in.	16 in. x $22\frac{1}{2}$ in.	16 in. x $28\frac{3}{4}$ in.
Depth,	7 in.	9 in.	9 in.
Size and number of Pots which can be fitted to each size,	two 5 in. or one 8 in. or one 9 in.	six 5 in. or one 10 in. and two 5 in.	two 12 in. or one 12 in. and four 5 in. or eight 5 in.
Price without Pots,	$10.00.	$18.00.	$20.00.

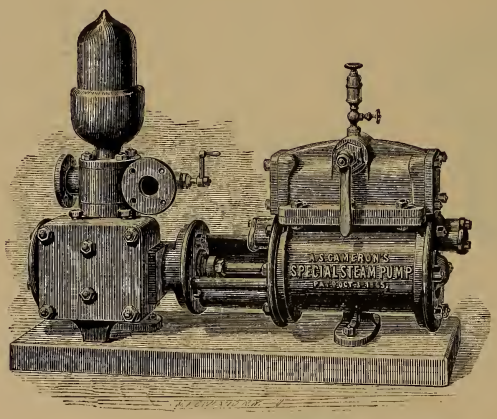
The Pots are of copper, and the prices and dimensions are as below:

Diam..	5 in.	8 in.	9 in.	10 in.	12 in.
Depth,	5 in.	$7\frac{1}{2}$ in.	$7\frac{1}{2}$ in.	8 in.	8 in.
Price,	$3.00	$4.00	$5.00	$6.00	$7.00

Five-inch Pots, of cast iron, galvanized, can be furnished at 75 cents each.

Cameron's Special Steam Pumps.

FOR PRICES, SEE PAGE 55.



Pumps will be lined with composition only when so ordered for duty requiring it.

In ordering, be sure to give full particulars of the work to be performed.

All the parts of the Pumps are interchangeable, so that in case of accident to any piece, a new one can be sent that will fit exactly.

The sizes and proportions given on the opposite page are adapted for Fire Pumps, or for heavy duty. All the parts are made very strong; the Pistons are about double the strength and depth usually fitted to Steam Pumps.

By removing the Water Chest Bonnet only, and without disturbing the Air Vessel or any of the Pipes, all the Pump Valves can be reached, and the whole interior of the Cylinder is exposed, so that anything foreign may be removed. This is a feature which we consider of very great value.

Price List of Cameron's Special Steam Pumps.

REGULAR LIST, WITH GENERAL DATA.

☞SEE OPPOSITE PAGE.☜

In comparing this List with that of other makers, compare the sizes of the Cylinders, and not the numbers of the Pumps.

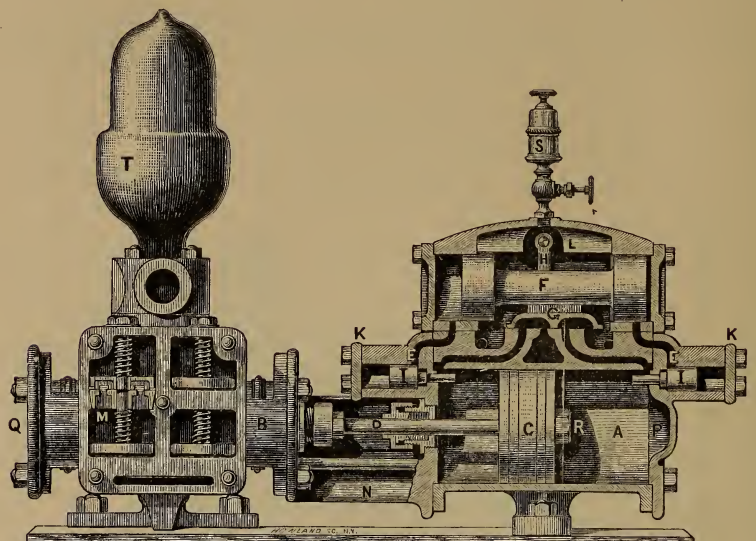
NUMBERS.	0	1	2	2½	3	3½	4	4½	5	6	7	8
Price,	$100	$150	$200	$250	$300	$350	$400	$450	$500	$650	$800	$1000
Diameter of Steam Cylinder, in inches,	3½	4	5	5	7	8	10	10	12	14	16	18
Diameter of Pump Cylinder, in inches,	2	2½	3	3½	3½	4	5	6	7	9	10½	12
Stroke of Piston, in inches,	5	5	7	7	10	10	12	12	12	15	15	18
Capacity per double stroke, in gallons,	1–7	¼	½	7–10	9–10	1 1–6	2 1–6	3¼	4¼	9	12	19
Capacity at ordinary speed, per minute,	10	15	25	35	45	60	80	110	140	270	325	400
Maximum Capacity,	30	45	80	100	135	165	240	300	360	675	900	1200
Boilers, in horse power they will supply,	25	40	80	120	150	225	350	425	500			
Size of Steam Pipe, in inches,	⅜	⅜	½	½	¾	1	1 1–4	1 1–4	1½	2	2	2½
Size of Exhaust Pipe, in inches,	½	½	¾	¾	1¼	1½	2	2	2½	3	3	4
Size of Suction Pipe, in inches,	1	1¼	1½	2	2½	2½	3	4	4	5	6	10
Size of Discharge Pipe, in inches,	¾	1	1½	1½	2	2	2	3	3	4	5	8
Diameter of Flange on Exhaust Pipe, in inches,												8½
Diameter of Flange on Suction Pipe, in inches,							7½	8½	8½	9½	11	17
Diameter of Flange on Discharge Pipe, in inches,					6	6	6	7½	7½	8½	11	15
Weight of Pump, in pounds,	160	210	370	425	810	875	1180	1500	1612	2450	3375	4800
Length over all, in feet and inches,	3–1	3–2	3–11	3–11	4–11	4–11	5–4	5–6	5–6	6–10	7	8
Height over all, in feet and inches,	1–6	1–7	2–5	2–8	3–1	3–1	3–7	4–3	4–3	4–7	5–7	6
Width over all, in feet and inches,	9	10	1–1	1–1	1–3	1–4	1–6	1–10	1–10	2–1	2–9	2–10

The above data apply to the Regular Sizes only.

SPECIAL NOTICE.—Every Pump guaranteed to give full satisfaction.

SECTIONAL VIEW OF

THE SPECIAL STEAM PUMP.



A. S. Cameron's Special Steam Pump.

EXPLANATION.—A, is the steam cylinder shown in the section; C, the steam piston; D, the piston rod; L, the steam chest; F, the plunger; G, the slide valve; H, a starting bar connected with a handle on the outside; I, I, are the reversing valves, and K, K, the bonnets over the reversing valves; N, is the body piece connecting the steam and water cylinders; B, is the water cylinder with the valve chest bonnet removed; M, is a valve seat shown in section—the valve over it is also shown in section; T, is the discharge air vessel.

OPERATION.—Suppose the steam piston, C, moving from right to left; when it reaches the reversing valve, I, it opens it and exhausts the space on the left hand end of the plunger, F, through the passage E, which leads to the exhaust pipe; the greater pressure inside of the steam chest changes the position of the plunger, F, and slide valve, G, and the motion of the piston, C, is instantly reversed. The same operation repeated at each stroke makes the motion continuous. The reversing valves, I, I, are closed by a pressure of steam on their larger ends, conveyed by an unseen passage direct from the steam chest.

DIRECTIONS.—When a pump is first connected, remove the bonnets, K, K, and valves, I, I, and blow steam through to remove any dirt or chips that may have lodged in the pipes; then clean and replace them. Should a pump stop on one end while in operation, remove the reversing valve on the other end, clean, and replace it.

All pumps, unless otherwise ordered, are arranged for fresh, cold water. Parties ordering pumps to be used on other duty than this will please give full particulars of the work to be done.

For pumps having their cylinders lined with composition, and fitted with composition rods, we charge ten per cent. extra. For pumps specially arranged with mountings in bronze, to resist the action of bad mine water (a class of work in which we have had large experience) we charge 15 per cent. extra. We make pumps of any size to order, having cylinders made entirely of composition or bronze, for which we add the additional cost of materials only.

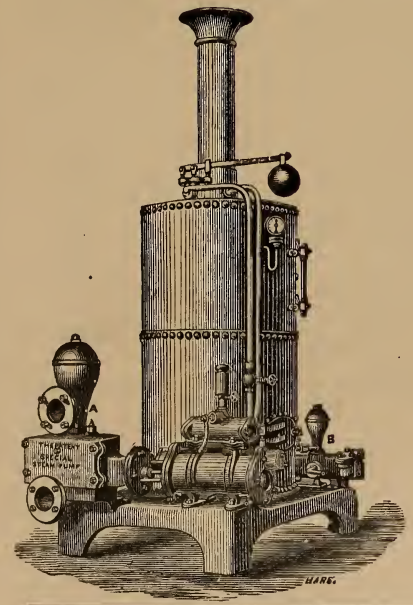
Our prices are subject to change at any time without notice.

THE SPECIAL STEAM PUMP,

COMPLETE WITH BOILER.

Extensively used in the United States, Great Britain, South America and in the East and West Indies.

The annexed illustration represents the Special Steam Pump, with Boiler and Boiler Feeder complete. They are mounted on one bed, and the apparatus is in every respect complete within itself.



THESE MACHINES ARE PARTICULARLY DESIGNED:

For Contractors' and Builders' use.
" Steam Fire Engines for Factories.
" Sugar, Soap and Chemical Works.
" Paper Mills, Dye Houses, Starch.
" Filling tanks at Railway Stations.

For Mines and Quarries, and for irrigating land.
" Towns, Mansions, Ships and Dock Yards.
" Supplying Water to Dwellings and Farms.
" Water Works, Gas Works, Sewage, &c.
" Breweries, Tanneries and Distilleries.

PRICE LIST.

SIZE OF PUMP.				SIZE OF BOILER.			Price of Pump and Boiler Complete.	
No.	Steam Cylinder.	Pump Cylinder.	Stroke.	Diameter.	Height.	Number of Tubes.		
0	4 in.	2 in.	6 in.	21 in.	48 in.	20—2 in.	$ 400	Self Feed.
1	5 "	2½ "	6 "	24 "	48 "	29—2 "	450	
2	6 "	3 "	7 "	24 "	60 "	29—2 "	500	
2½	6 "	3½ "	7 "	24 "	60 "	29—2 "	550	
3	7 "	3½ "	10 "	30 "	72 "	42—2 "	700	
3½	8 "	4 "	10 "	30 "	72 "	42—2 "	800	Plunger Feed.
4	10 "	5 "	12 "	36 "	72 "	55—2 "	950	
4½	10 "	6 "	12 "	36 "	72 "	55—2 "	1,000	
5	12 "	7 "	12 "	36 "	84 "	55—2 "	1,250	No 0, Feed Pump.
6	14 "	9 "	15 "	42 "	84 "	73—2 "	1,500	

Large sizes, or modifications of these sizes, made to order at short notice.

Large catalogue and specific information furnished on application.

PRICE LIST OF FIRE PUMPS.

Pumps.	Diameter of Steam Cylinder.	Diameter of Water Cylinder.	Stroke.	Gallons Discharged per Double Stroke.	Steam Pipe.	Exhaust Pipe.	Suction Pipe.	Delivery Pipe.	Price.
A	8	4	10	1⅛	1½	1½	2½	2	$350
B	10	5	12	2⅙	1¼	2	3	2	400
C	10	5	24	4⅓	1¼	2	5	3	600
D	12	7	12	4¼	1½	2½	4	3	500
E	12	7	24	8½	1½	2½	6	4	750
F	14	7	15	5½	2	3	4	3	650
G	14	7	30	11	2	3	6	4	900
H	14	9	15	9	2	3	5	4	650
I	14	9	30	18	2	3	8	6	1,000

These Pumps may be run as fast as the steam will follow the piston, without any fear of the piston striking the cylinder cover, even at 600 strokes per minute, a test which no other Direct Acting Steam Pump will survive.

Our Special Fire Pumps are made with large openings, and their parts are made more than usually strong. They have each two or more outlets, to which hose can be connected. They will start at any point by simply turning on steam. Our crank and fly-wheel pumps are frequently used as fire pumps. The North River—and Sound steamers—and nearly all our government and steam merchant vessels are fitted with them. We have also furnished them to a large number of hotels and public buildings throughout the country. They are built very strong and will stand a great deal of abuse.

BREWERS' PUMPS.

Pumps.	Diameter of Steam Cylinder.	Diameter of Water Cylinder.	Stroke.	Diameter of Pipes in inches.				Price.
				Steam.	Exhaust.	Suction.	Delivery.	
A	5	4	10	½	¾	2½	2	$275
B	7	5	12	¾	1¼	3	2	350
C	10	7	12	1¼	2	4	3	475
D	12	9	15	1½	2½	5	4	600
E	14	12	18	2	3	8	6	750

The annexed are the sizes usually employed for pumping Beer, (Hot or Cold.) We make any size to order.

BREWERS' AIR PUMPS.

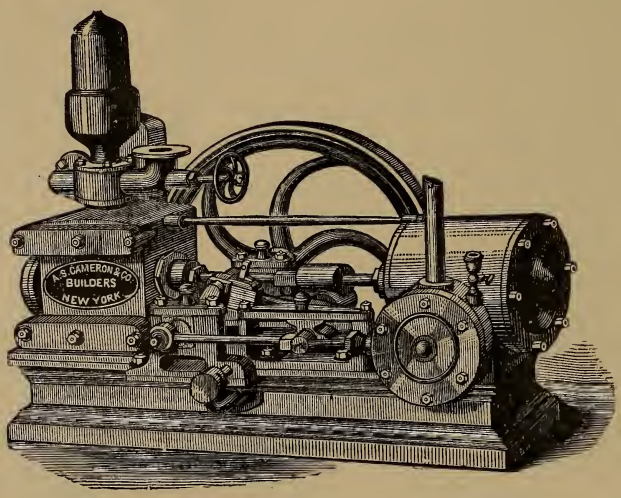
Pumps.	Diam. of Steam Cylind'r.	Diam. of Air Cyl.	Stroke.	Price.
A	5	4	7	$2 50
B	7	6	12	3 50

These Pumps are used for moving Beer from one place to another. They may be placed in the Engine Room, and a hose carried from them in any direction will convey compressed air for the purpose of moving liquid from one receptacle to another. No Brewery is complete without one of them.

SEWELL & CAMERON'S

PATENT

CRANK AND FLY WHEEL PUMPS.

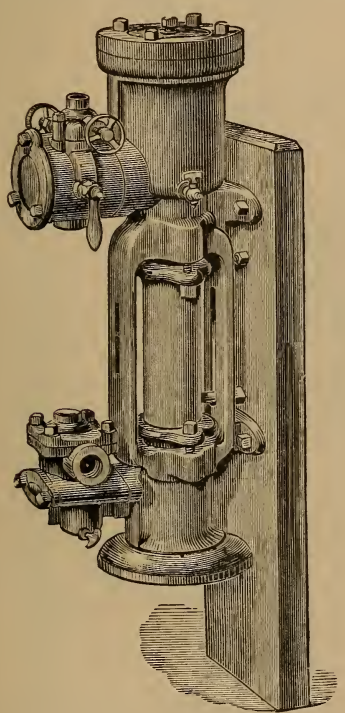


No.	Diameter of Water Cylinder.	Diameter of Steam Cylinder.	Stroke of Piston.	Gallons Discharged Per Double Stroke.	Price.
1	2¼	5	6	1–5	$225
2	3	6	6	1–3	300
3	3½	7	6	1–2	400
3½	4	8	7	3–4	475
4	5	10	7	1 1–5	554
5	7	12	7	2 1–3	650
6	9	12	7	5	850
7	11	16	9	7 1–2	1000
8	12	18	12	12	1400

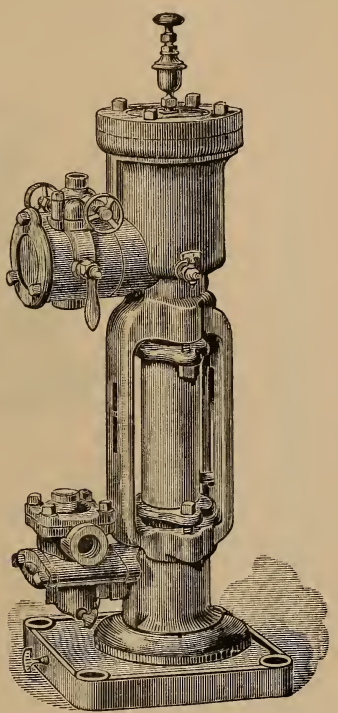
CHAMPION PATENT BOILER FEEDER

For Supplying Steam Boilers or Vessels under Pressure, with either Hot or Cold Water.

It is well known to all intelligent engineers and observers, that BOILER EXPLOSIONS most frequently occur immediately after interruption and irregularity of the flow of the Feed or supply Water into the Boiler; hence a Feed or Supply Pump wholly independent of other machinery, is the most requisite of all Boiler appliances.



With Brackets to Bolt to Boiler or Post.



With Base to stand on floor or Timber

DESCRIPTIVE PRICE LIST.

Class.	Diameter Steam Cylinder.	Diameter Water Cylinder.	Stroke.	Diameter Steam Pipe.
A	4 in.	2 in.	3 in.	$\frac{1}{2}$ in.
B	5 "	3 "	5 "	$\frac{1}{2}$ in.
C	6 "	$3\frac{1}{2}$ "	6 "	$\frac{3}{4}$ in.
D	7 "	$4\frac{1}{2}$ "	8 "	$\frac{3}{4}$ in.
E	$9\frac{1}{8}$ "	$6\frac{7}{8}$ "	9 "	1 in.

Class.	Diameter Exhaust Pipe.	Diameter Receiving Pipe.	Diameter Discharge Pipe.	Price.
A	$\frac{3}{4}$ in.	1 in.	$\frac{3}{4}$ in.	$100.00
B	$\frac{3}{4}$ "	$1\frac{1}{4}$ "	$1\frac{1}{4}$ "	125.00
C	1 "	$1\frac{1}{2}$ "	$1\frac{1}{2}$ "	160.00
D	$1\frac{1}{4}$ "	$1\frac{1}{2}$ "	$1\frac{1}{2}$ "	These Sizes
E	$1\frac{1}{2}$ "	2 "	2 "	made to order.

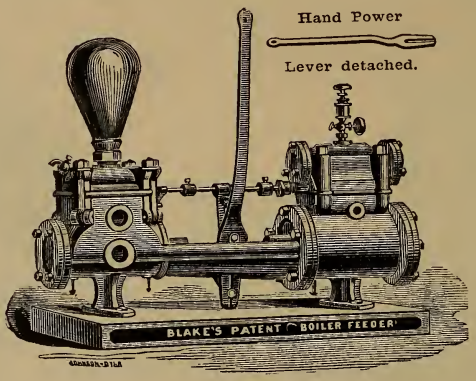
CHARLES REUTER. J. D. MALLORY.

BLAKE STEAM PUMP,

PUMPS FOR FEEDING BOILERS OR FORCING WATER UNDER HEAVY PRESSURE, WITH HAND POWER ATTACHMENT.

A pump capable of supplying one hundred horse-power boilers may be run so slowly as to supply the exact quantity of water evaporated by a one-horse boiler. Practical Engineers will appreciate this feature.

These pumps are arranged in two different styles, one for cold water, the other for hot water. When both hot and cold water are to be used, order the hot water pump.



No.	Diameter Steam Cylinder.	Diameter Water Cylinder.	Stroke	Gallons per Stroke	Strokes per Minute.	St'm Pipe	Exhaust Pipe.	Suction Pipe	Discharge Pipe.	Price.	
0	3½	2⅛	3	0.046	1 to 400	⅜	½	¾	½	$100	With Hand Power Attachment.
1	4	2½	3½	0.074	1 " 400	½	¾	1	¾	150	
2	4	2½	5	0.106	1 " 350	½	¾	1¼	1	200	
3	5½	3¼	7	0.251	1 " 300	½	¾	1½	1¼	250	
4	6	3¾	7	0.334	1 " 300	¾	1	2	1½	375	
5	7¼	4½	10	0.688	1 " 250	1	1½	2½	2	375	
6	8	5	10	0.850	1 " 250	1	1½	3	2½	400	
7	10	6	12	1.468	1 " 200	1¼	2	3½	3	475	
8	12	7	12	1.953	1 " 200	1½	2½	4	3	550	
9	14	8	12	2.611	1 " 200	2	3	5	3½	600	
10	16	9	18	4.957	1 " 150	2	3	6	4	800	
11	18	12	24	11.740	1 " 100	2	3	8	6		
12	20	14	24	15.990	1 " 100	2½	3½	10	8		

Larger sizes of various proportions of steam to water cylinder and of any desired capacity, to order.

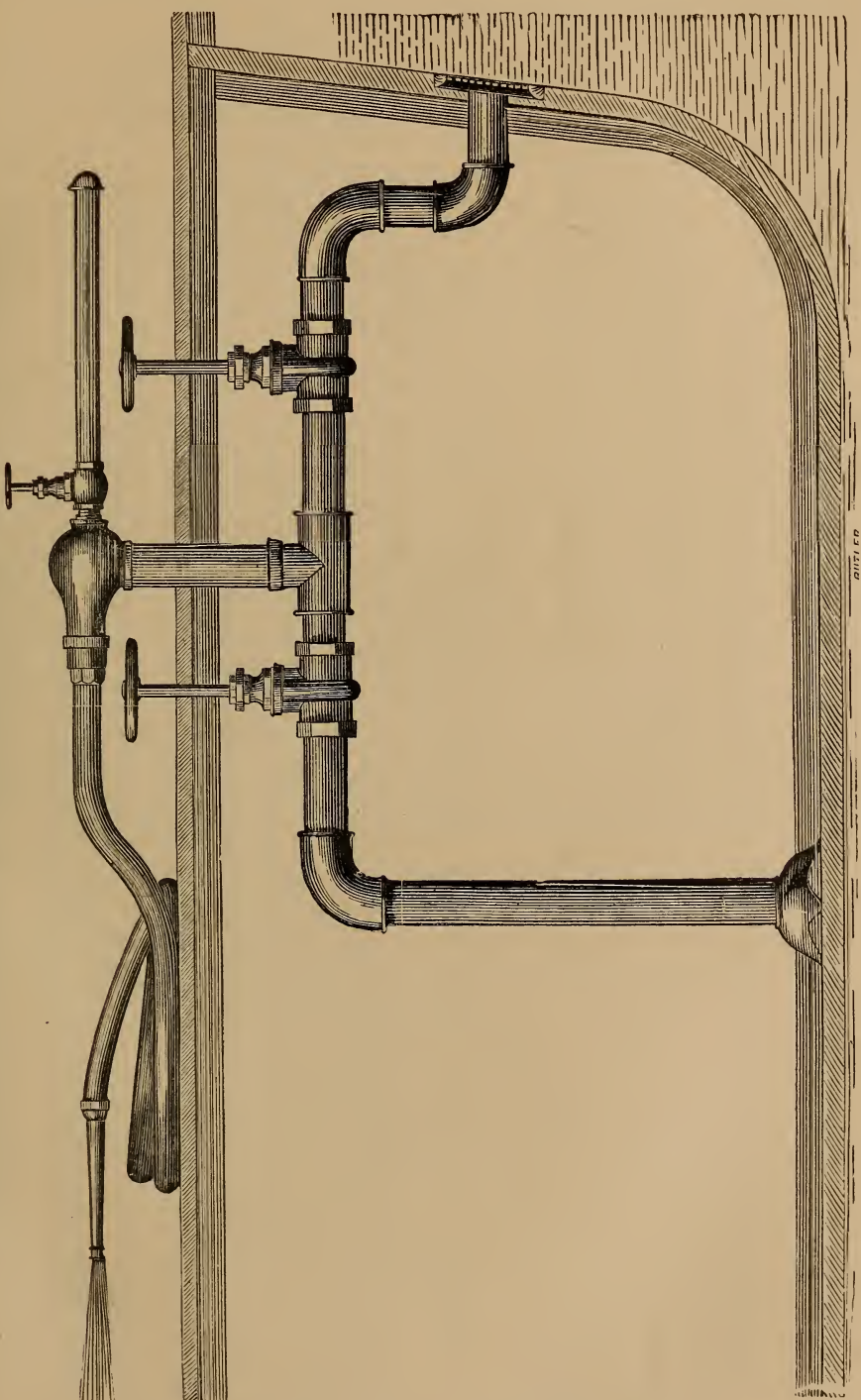
When ordering a Pump, please answer the following questions: 1st. To what service it is applied. 2d. The quality of the liquid to be pumped—whether salt, fresh, acid, clear or gritty, and is it to be pumped cold or hot? 3d. To what height is it to be lifted by suction, and what is the length of the suction pipe? 4th. To what height, or against what pressure, is the water to be forced? 5th. What is the greatest quantity of water needed per hour? 6th. What pressure of steam is used?

BRASS PUMPS, DIFFERENCE IN COST OF METAL EXTRA.

NOTE.—The utility of Pumps with Hand Power Attachment will be seen at once, as the Pump can be used, when steam is down, for filling boilers, washing decks, fire purposes, and to do general pumping. When the pump is being operated by steam, the Hand Lever can be removed simply by lifting it from the pin on which the fork rests.

☞ Each Pump has suction and delivery openings on both sides: this makes it very convenient, as connections can be made on either side of pump desired.

SHERRIFF'S STEAM SYPHON PUMP.



(For Description and Price List, see following page.)

SHERRIFF'S STEAM SYPHON PUMP.

Having all the requirements of a first-class Fire Pump, and being free of all defects incidental to others, makes it a very desirable and useful article.

Once in complete working order, it remains so; no matter how frosty the weather, nor how much sand and mud in the water, the SHERRIFF PUMP continues to work without interruption. As it is without valves of any kind, consequently it cannot wear the working parts. This feature of itself at once places this Pump in the front rank.

It has been accepted by the Board of Supervising Inspectors as the equivalent of a Steam Piston Pump for all purposes, both Bilge and Fire, on all steamers coming under the late Act of Congress which requires Steam Fire Pumps on all Passenger Steamers of the size and capacity as below.

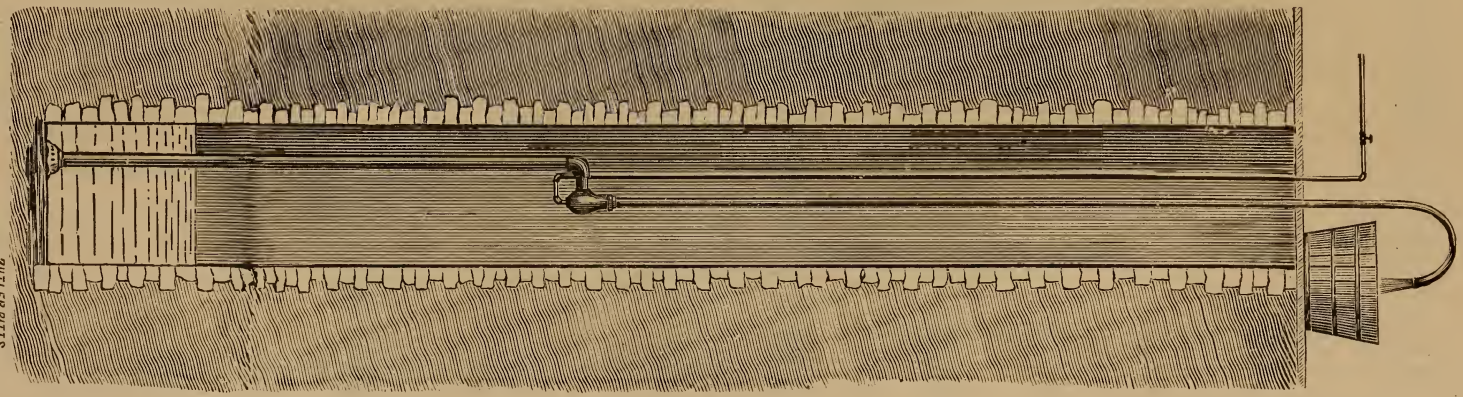
Comparison of Prices of Steam Piston Pumps with its Equivalent, "Sherriff's" Patent Syphon Pump.

STEAM PISTON PUMPS.			SHERRIFF'S PATENT SYPHON PUMPS.		
Size of Pump.	Stroke.	Price.		Size of Pump.	Price.
2 in. Water Cylinder.	4 in.	$100 00	Or Coll's Patent Syphon Pump, ...	1½ inch.	$20 00
4 in. "	7 in.	300 00	" " " "	2 "	24 00
6 in. "	7 to 10 in.	400 00	" " " "	2½ "	28 00
6 in. "	7 to 10 in.	400 00	" " " "	3 "	32 00
7 in. "	10 to 12 in.	650 00	" " " "	4 "	52 00
10 in. "	12 to 15 in.	800 00	" " " "	5 "	72 00

Persons interested in a Pump for elevating water from wells, springs, etc., for steam purposes, or a Fire Pump for the protection of buildings, steamers and other property, are respectfully requested to examine this Pump. We claim that it is, without doubt, the cheapest and best Steam Pump in the world.

P. S.—The above Pump was formerly known as the "COLL" Syphon Pump.

Sherriff Patent Steam Syphon Pump.



The above cut represents the SHERRIFF SYPHON placed in a well, the entire distance from the surface of the ground to the water being 35 feet, viz: 15 feet suction and 20 feet discharge. Where the height is greater than this, two Pumps are recommended.

SIZE, ... Inches,	1	1¼	1½	2	2½	3	4	5	6
Brass Pump, for all purposes, . .	$10 00	$15 00	$20 00	$24 00	$28 00	$32 00	$52 00	$72 00	$96 00
Cast Iron Strainers for above, . .	1 00	1 00	1 50	1 50	2 00	2 50	4 00	5 00	6 00
Brass Strainers for above, . . .	2 00	2 00	3 00	3 00	4 00	5 00	6 50		

Price List of Upright Boilers.

No.	Diameter.	Height—Feet.	Number of Flues.	Length of Flues.	Diameter of Flues.	Depth of Furnace.	Diameter of Furnace.	Horse Power.	Area of Grate.	Weight.	Price.
1	15	4½	9	3–6	2	14	11	1.3	.66	500	
2	18	5	18	3–10	2	14	14	2.6	1.7	750	
3	21	5½	21	4–2	2	16	16	3.4	1.39	1000	
4	24	6	28	4–6	2	18	19	4.7	1.90	1200	
5	26	6½	36	4–10	2	20	21	6.3	2.41	1450	
6	28	7	44	5–3	2	21	23	8.9	2.89	1700	
7	30	7½	53	5–7	2	22	25	11.4	3.41	2100	
8	33	8	61	6	2	23	28	13.11	4.27	2500	
9	36	8½	68	6–6	2	25½	30½	16.11	5.07	2850	
10	40	9	88	6–8	2	28	34	23.5	6.24	3800	
11	44	9½	103	7	2	30	37½	27.1	7.66	4800	
12	48	10	124	7–6	2	34	41	38.8	9.16	5600	

BATH BOILERS.

WROUGHT IRON.

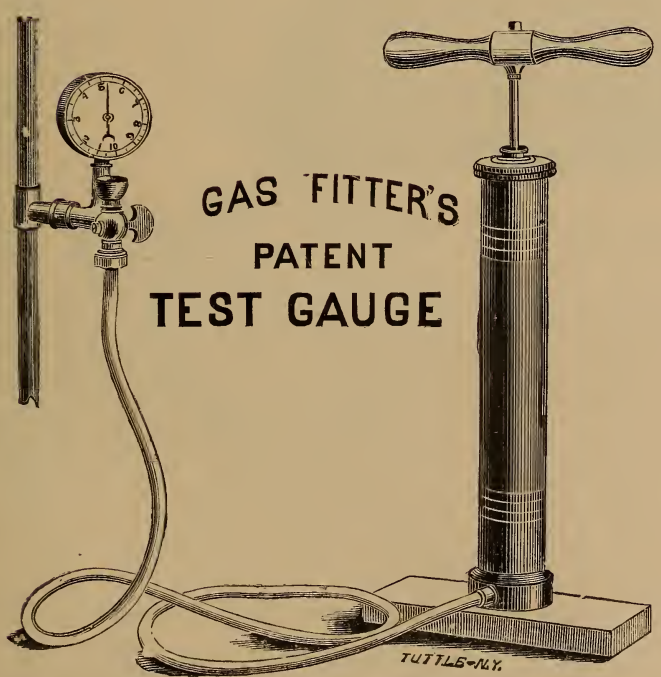
Diameter.	Length.	Gallons.	Price Plain.	Price Galvanized.
12 inch.	36 inch.	20	$13 00	$17 00
12 "	42 "	22	14 00	18 00
12 "	48 "	25	15 00	19 00
12 "	54 "	28	16 00	21 00
12 "	60 "	30	17 00	23 00
14 "	36 "	25	17 00	23 00
14 "	42 "	30	18 00	24 00
14 "	48 "	35	19 00	25 00
14 "	54 "	40	20 00	26 00
14 "	60 "	45	22 00	29 00
16 "	48 "	43	23 00	31 00
16 "	60 "	53	28 00	37 00
16 "	72 "	64	35 00	46 00
18 "	48 "	54	30 00	38 00
18 "	60 "	68	33 00	43 00
18 "	72 "	80	40 00	53 00
20 "	60 "	84	41 00	55 00
20 "	72 "	100	50 00	65 00
22 "	60 "	105	50 00	65 00
22 "	72 "	120	57 00	76 00
24 "	60 "	125	55 00	74 00
24 "	72 "	150	64 00	83 00
24 "	84 "	200	77 00	100 00

Add $3.00 when Spuds, Couplings and Tube are required.

GAS FITTER'S

PATENT TEST GAUGE.

Steel Diaphragm, with Proving Pump.



DRIP PUMP.

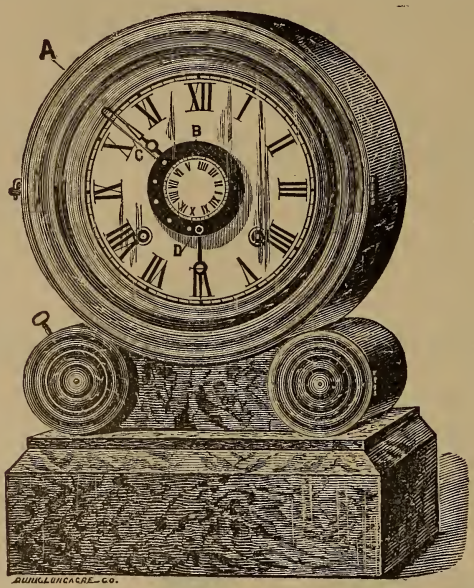
Price, $25.00

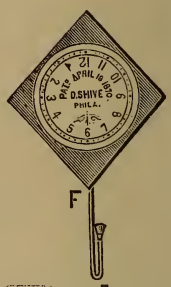
PRICES.

Gauge, with Patent Cock and Proving Pump, complete, ...	$23 50
" " "	13 50
Pump, with six feet of Hose, ...	10 00

Patent Watchman's Clock and Time Detector.

Scale—2 inches to a foot.





Patented April 19, 1870.

THE BEST AND CHEAPEST WATCHER OF THE WATCHMAN MADE;

A, is the clock complete. B, is a slate edged sub-dial attached to the centre post of the clock, and also to the hour hand by the wire C, which is curved so as to allow the free passage of the minute hand under it. D, is a small hole in the glass covering the face of the clock, large enough to admit the end of a white pencil, a number of which are furnished with each clock.

The operation is very simple. The watchman is directed by his employer to make a mark every hour, half hour or other period of time, which is done by passing the pencil through the hole in the glass against the slate. The time of the sub-dial opposite the hole always corresponds with that of the clock, so that the slate edge of the disc will show the exact time at which a mark was made upon it. In the cut marks are seen at each hour from six o'clock. We will suppose the clock to be running. If the watchman were now to make his mark, the disc would show that it was made at half-past ten, which is the time of the clock. If he takes a nap of a couple of hours or so, and in the morning marks are missing at points where they should have been made, it is proof that he has been sleeping or not on duty; for if he neglects to mark at the proper time he CANNOT DO SO AFTERWARD, as the disc is attached, as above stated, to the hour hand, and revolving with it, that point is carried past the hole, and the morning REVEALS THE TRUTH TO THE EMPLOYER.

It cannot be tampered with, as the door of the clock is secured by a tumbler lock which cannot be picked. No two locks are alike, and there being but one key to a lock and that carried in employer's pocket, the watchman cannot duplicate it.

Other Watchman Detectors have keys fixed on the different floors and the time piece is carried to the key for marking. These keys being in the possession of the watchman all night, he leisurely duplicates a set from pattern, carries them with him, and marks the detector at home, in a neighboring saloon, or wherever he pleases. This Detector is screwed from the inside to a fixed position, and is AN UNERRING SENTINEL.

Another style of Detector is arranged with wires running to it from the different floors, which wires are nearly always out of order, AND THE WATCHMAN TAKES CARE TO KEEP THEM SO. This Detector is constructed in the most simple and durable manner, does not interfere with the running of the clock, and cannot get out of order. Another objection to other Detectors is their price, which varies from $75 to $100, while this costs but $15. The clock is an eight day— and we warrant it as a first-class time-piece.

E, is a reverse view of the sub-dial B, showing how it is attached to the clock. F is another style of sub-dial used in the same manner as B. It is a thin brass case containing a paper dial —(each clock being furnished with enough to last a year.) The marks are made on this with a lead pencil. In the morning the paper dial is taken out, (which can be filed as a record of the watchman's time,) a new dial put in, the clock locked, and all is ready for the next term of the watchman. When the disc B is used, all that is necessary is to wipe the marks from the slate edge. In doing so it is best to take it off the clock. In replacing the paper dial in F, care should be taken to have the arrow printed on it point toward the wire, and to place the wire in the groove made in one corner of the back of the brass case.

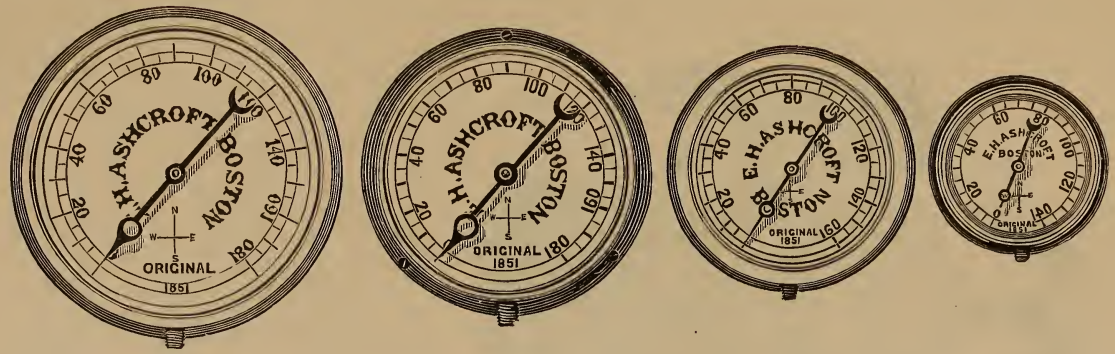
No business concern employing a watchman should be without this Detector. Proprietors of stores who wish them opened and closed at certain hours in their absence, should have them. The time of the clock can be seen as well with the Detector attached as without it. SATISFACTION GUARANTEED IN EVERY CASE.

PRICE ONLY $15 EACH.

CHARLES REUTER. J. D. MALLORY.

Original Ashcroft Steam Gauge.

No. 4. No. 5. No. 8. No. 9.



These Gauges are manufactured in a most thorough manner, and are fully warranted to give the most perfect satisfaction.

No. 1,	Brass Case,	10 inch	Dial, $40 00
" 2,	"	8	" 30 00
" 3,	"	6¾	" 25 00
" 4,	"	6	" 20 00
" 5,	"	5	" 18 00
" 3½,	Iron Case,	6¾	" 16 00
" 6,	"	6	" 14 00
" 7,	"	5	" 10 00
" 8,	Brass Case,	4	" 12 00
" 8½,	Iron Case,	4	" 10 00
" 9,	Brass Case,	3	" 12 00
" 9½,	Iron Case,	3	" 10 00
" 11,	Brass Case,	2	" 10 00

Groups of Steam Gauges and Cocks,

FOR STEAMBOATS AND OFFICES.

No. 1, consisting of one 6 inch Brass Steam Gauge,
one 6 inch Brass Vacuum Gauge,
one 6 inch Howard Clock,
All mounted on a fine Walnut Stand. } Price, $100.00

No. 2, consisting of one 8½ inch Brass Steam Gauge,
one 8½ inch Brass Vacuum Gauge,
one 8½ inch Howard Clock,
All mounted on a fine Walnut Stand. } Price, $280.00

No. 3, consisting of one 10 inch Brass Case Steam Gauge,
one 10 inch Brass Case Vacuum Gauge,
one 10 inch Howard Clock,
All mounted on a fine Walnut Stand. } Price, $325.00

Counters, to indicate the number of revolutions, furnished at an extra cost of $65 for 8½ inch; $70 for 10 inch.

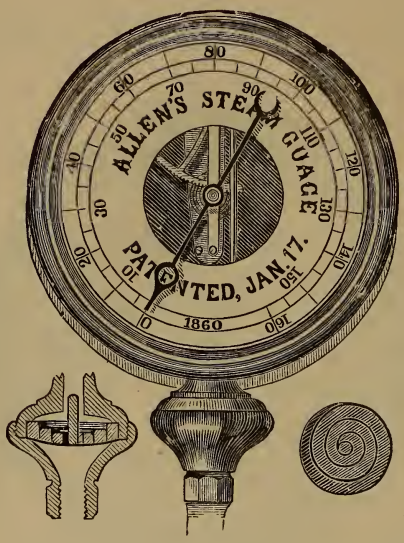
The above Gauges and Clocks Silver Plated or Nickel Plated to order, at a small advance on above prices.

BOURDON STEAM GAUGE,

WITH LANE'S IMPROVEMENT.

No. 00,	Brass Case,	10 inch	Dial,	Engraved,	$60 00
" 0,	"	9	"	"	50 00
" 0,	"	9	"	Plain,	40 00
" 1,	"	8½	"	Engraved,	45 00
" 1,	"	8½	"	Plain,	32 00
" 2,	"	6¾	"	Lane's Improvement, Locomotive, Steamboat, or Stationary,	22 00
" 2,	"	6¾	"	Old Style, High or Low Pressure, or Vacuum,	20 00
" 3,	Iron Case,	6¾	"	Old Style, High or Low Pressure, or Vacuum,	17 00
" 3,	"	6¾	"	Lane's Improvement, Locomotive, Steamboat, or Stationary,	20 00
" 4,	Brass Case,	6	"	Old Style, High or Low Pressure,	17 00
" 4,	"	6	"	Lane's Improvement,	20 00
" 4,	Iron Case,	6	"	Old Style,	15 00
" 4,	"	6	"	Lane's Improvement,	17 00
" 5,	Brass Case,	5½	"	" " Stationary,	14 00
" 6,	Iron Case,	5½	"	Old Style, Stationary,	10 00
" 6,	"	5½	"	Lane's Improvement, Stationary,	12 00
" 7,	Brass Case,	3½	"	For Back Pressure, etc.,	8 00
" 7,	"	3½	"	Whole Circle,	10 00
" 8,	"	2½	"	Gas Test Gauge,	10 00

Allen's Patent Steam Gauge.



No. 00,	Brass Case,	4¼ inch	Dial,	Stationary,	$10 00
" 00,	Iron "	4¼	"	"	8 00
" 0,	Brass "	5¼	"	"	12 00
" 1,	Iron "	5½	"	"	10 00
" 2,	" "	6	"	"	12 00
" 1,	Brass "	6	"	"	16 00
" 2,	" "	6¾	"	Locomotive,	19 00
" 3,	Iron "	6¾	"	"	16 00
" 3,	Brass "	8½	"	Engraved,	40 00
" 3,	" "	8½	"	Plain,	30 00
" 4,	" "	10	"	Engraved,	45 00
" 5,	" "	10	"	Pressure Vacuum,	50 00
" 6,	" "	13½	"	Pressure and Two Vacuums,	90 00

A Vacuum and Pressure Gauge, Revolution Counter, and Howard Clock in one Case, 20 inch Ring, Brass Case, . 275 00

Two Vacuums and one Pressure Gauge, Revolution Counter, and Howard Clock in one Case, 20 inch Ring, Brass Case, 275 00

A Howard Clock and Counter, in one Case, 10 inch Dial, Brass Case, and Silver-plated Ring or Bizzel, Gold-plated Hands, 140 00

A Howard Clock, 10 inch Engraved Dial, separate Case, . 100 00

" " 8½ inch Engraved Dial, same style, . 95 00

10 inch Counter, in separate Case, same style, . . . 70 00

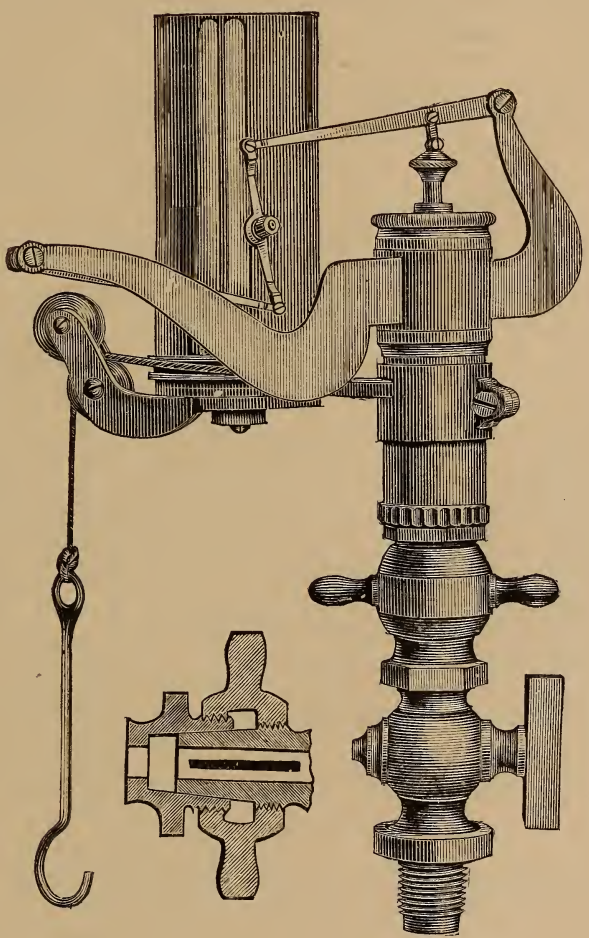
8½ " same style, ... 60 00

Each of the above with Stand or Base, $10 extra.

Richard's Parallel Motion Indicator.

This is an instrument designed to show the pressure of steam in the cylinder, at each point of the piston's stroke.

The particular attention of Engineers is called to the Indicator, for by its proper use the power of an Engine may be ascertained, its valves accurately set, and any defects in the working of the Engine discovered. Thousands of the Instruments are used in England, and the U. S. Government require them in all ships. The demand for these important Instruments increases constantly, as their usefulness becomes known. A Treatise on the Indicator, by F W. BACON, furnished with each Instrument.

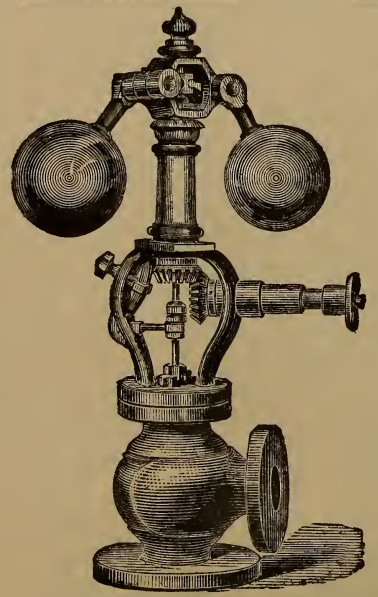


PRICES.

Indicator, with one Spring, Scale and Cock,	$90 00
Extra Springs and Scales, 12, 16, 24, 30, 40, 60,	6 00
Extra Cocks,	2 50
Elbows,	2 00
Carrying Pulleys,	50
Parallel Rule,	7 00

SHIVES'

STEAM ENGINE GOVERNOR.



PRICE LIST.

SIZE. Diam. of Steam Pipe.	Black.	Finished.	Ball and Lever.	Speeder.	Automatic Safety Check.	Stop Valve.
inches.						
$\frac{3}{4}$	$28 00	$30 00	$ 3 00	$ 3 75	$.....	$ 3 75
1	33 00	36 00	3 00	3 75	.....	5 00
$1\frac{1}{4}$	40 00	43 00	3 25	4 00	.....	5 75
$1\frac{1}{2}$	45 00	50 00	3 50	4 50	8 00	7 50
2	57 00	62 00	4 00	5 00	9 00	11 00
$2\frac{1}{2}$	70 00	76 00	4 75	5 75	10 00	17 00
3	83 00	90 00	5 50	6 50	11 00	23 50
$3\frac{1}{2}$	96 00	104 00	6 25	7 25	12 50	30 00
4	109 00	118 00	7 25	8 25	14 50	37 00
$4\frac{1}{2}$	120 00	132 00	8 00	9 00	16 00	42 00
5	136 00	150 00	8 75	10 00	17 50	53 00
6	173 00	185 00	9 50	12 00	19 00	69 50
7	230 00	255 00	12 00	14 00	22 50	92 50
8	255 00	275 00	13 00	15 00	25 00	115 00

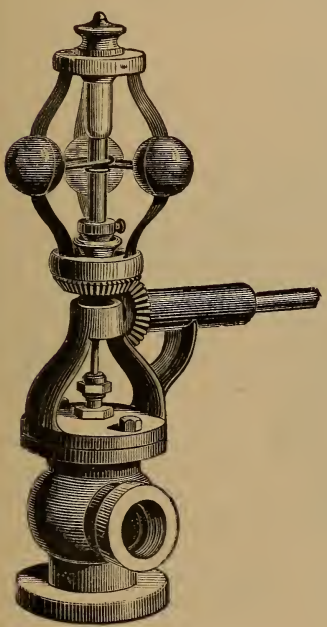
DIMENSIONS OF GOVERNORS.

SIZE. Diam. of Steam Pipe.	Diam. of Base Flange.	Diam. of Side Flange.	Base Flange to Centre of Steam Pipe.	Centre of Governor to Side Flange.	Centre of Governor to End of Shaft.	Base Flange to Centre of Shaft.	Extreme Height.	Greatest Spread of Balls.	Average Revolutions per Minute.
Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	
$\frac{3}{4}$	.....	.....	$1\frac{3}{4}$	2	$8\frac{1}{2}$	6	$13\frac{1}{2}$	10	150
1	4	.....	$2\frac{1}{2}$	$2\frac{3}{4}$	$9\frac{1}{2}$	$7\frac{3}{8}$	$16\frac{1}{2}$	11	100
$1\frac{1}{4}$	$4\frac{3}{4}$	$3\frac{1}{2}$	$2\frac{5}{8}$	$3\frac{1}{4}$	$10\frac{1}{2}$	$8\frac{5}{8}$	$18\frac{1}{2}$	12	100
$1\frac{1}{2}$	6	$4\frac{1}{4}$	$3\frac{1}{8}$	4	$11\frac{1}{2}$	$10\frac{1}{2}$	22	14	100
2	7	$5\frac{1}{4}$	$3\frac{7}{8}$	$4\frac{1}{2}$	$12\frac{1}{2}$	12	$24\frac{1}{2}$	15	90
$2\frac{1}{2}$	$7\frac{3}{4}$	$6\frac{1}{2}$	$4\frac{1}{4}$	$5\frac{1}{2}$	$13\frac{1}{2}$	$12\frac{3}{8}$	$26\frac{1}{2}$	$17\frac{1}{4}$	90
3	9	$7\frac{5}{8}$	$5\frac{1}{8}$	$6\frac{1}{2}$	15	$15\frac{3}{8}$	$30\frac{1}{2}$	$19\frac{1}{4}$	80
$3\frac{1}{2}$	$9\frac{1}{2}$	$7\frac{7}{8}$	$5\frac{1}{4}$	$6\frac{3}{4}$	15	16	32	20	80
4	10	$8\frac{1}{2}$	6	$7\frac{1}{2}$	17	18	36	23	76
$4\frac{1}{2}$	$10\frac{1}{2}$	$9\frac{3}{8}$	$6\frac{3}{8}$	8	17	20	38	$23\frac{1}{2}$	76
5	12	10	$7\frac{1}{4}$	$8\frac{3}{4}$	$21\frac{1}{2}$	$21\frac{3}{4}$	$42\frac{1}{2}$	25	70
6	$13\frac{1}{2}$	11	$7\frac{3}{4}$	$10\frac{1}{8}$	25	$23\frac{1}{2}$	47	27	65
7	15	13	$8\frac{5}{8}$	$11\frac{1}{4}$	30	$25\frac{1}{2}$	50	29	60
8	16	15	$9\frac{3}{4}$	$12\frac{3}{4}$	33	30	55	31	55

PICKERING'S

PATENT STEAM ENGINE REGULATOR OR SPRING GOVERNOR.

The 1867 Paris Exposition has Awarded this Regulator the First Prize Medal.



This Regulator is offered entirely on its own merits. Its price is less than that of any other good Governor; having no joints, it is extremely sensitive. Its durability is beyond question. Its economy in fuel has been fully proved.

DIRECTIONS.

The speed for each Regulator is stamped on it. Its position may be either vertical, inclined or horizontal. Attach as close as possible to the steam cylinder. Use pulleys as large as convenient, and keep the driving belt free from grease, and tight enough to prevent slipping. Put fresh packing (lampwick) in the stuffing-box occasionally. Do not allow the springs to rust. Oil the cap on top, the lower brass sleeve and the horizontal bearing.

PRICE LIST OF PICKERING'S IMPROVED SPRING GOVERNOR,

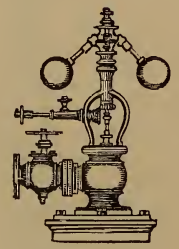
WITH BALANCED VALVE, ATTACHED COMPLETE.

Size of Valve or Diameter of Steam Pipe,	½	¾	1	1¼	1½	2	2½	3 in.
Finished,	$30	$30	$30	$36	$42	$54	$68	$77
Plain,			28	33	38	48	62	70

Size of Valve or Diameter of Steam Pipe,	3½	4	5	6	7	8	9	10 in.
Finished,	$86	$100	$126	$156	$188	$232	$265	$325
Plain,	78	92	115	144	174	215	245	315

JUDSON'S

Patent Governors and Valves, and Stop Valves.



When Governors are ordered, be particular and say, Governor with Stop Valve, or without Stop Valve, and either Black Finished or Portable, as you may require, and with or without Lever Attachment. Exact speed of each Governor is marked on the Top Head.

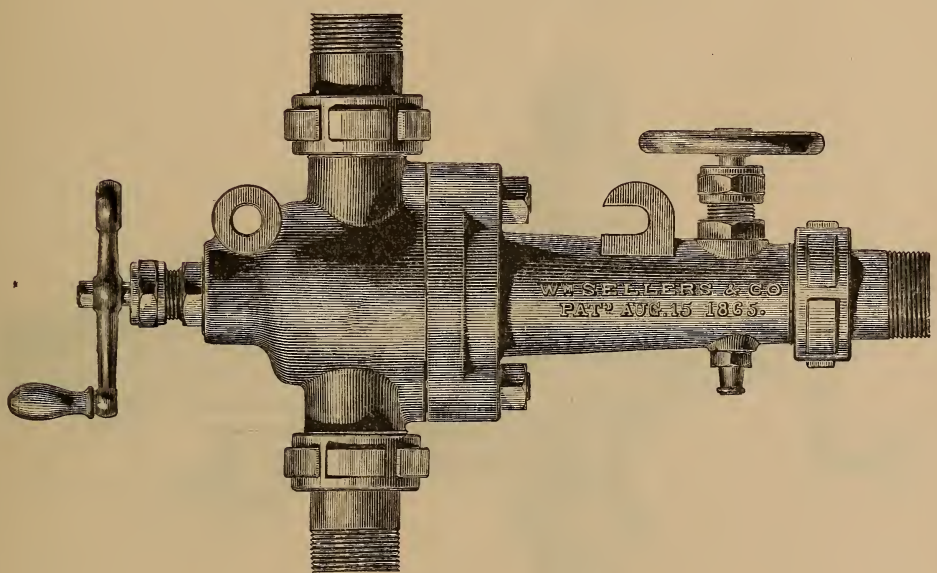
Capacity of Valve or diameter of Steam Pipe.	Price Black.	Price Bright Finish.	Price Stop Valve.	Price of Lever Attachment for altering speed.	Size of Valve to diameter of Engine Cylinder at ordinary speed of piston (300 ft. per min.) For greater speed use larger Gov's.	Extreme Height.	Dist'ce from centre of Governor valve to stop valve.	Distance from base flange to centre of steam pipe.	Dist'ce from centre of Governor to end of pulley shaft.	Diameter of Base Flange.	Diameter of Outside Stop Valve Flange.	Diam. of Cylinder Flange connecting with Stop Valve.	Speed of Governor, number of revolutions per minute.	Greatest expansion of Balls	Diameter and face of Pulley that should be put on each Governor to drive it properly, and larger is better.
¾ in.	$ 23 00	$ 25 00	$	$ 1 75	2 to 3 inch.	13 in.	2 in.	3 in.	7 in.	3¾ in.		Screwed for Steam Pipe.	160	9 in.	3 x1½ inches.
1 "	27 00	30 00	6 00	2 00	4 to 5 "	16½ "	2⅛ "	2⅜ "	8¼ "	4½ "			130	12 "	3½x1½ "
1¼ "	33 00	36 00	8 00	2 25	5 to 6 "	19 "	2½ "	3 "	9½ "	5 "			120	12¾ "	4 x2 "
1½ "	39 00	43 00	10 00	2 50	6 to 7 "	20½ "	3 "	3⅜ "	10¼ "	5¾ "			120	13½ "	4½x2½ "
2 "	47 00	53 00	14 00	2 75	7 to 8 "	25 "	3 "	4 "	12¼ "	6½ "		5½ in.	110	17 "	5½x2½ "
2¼ "	55 00	61 00	18 00	3 25	8 to 9 "	28½ "	4¾ "	4¾ "	13¾ "	7½ "	6½ in.	6 "	110	18 "	7 x2½ "
2⅝ "	63 00	69 00	22 00	3 75	9 to 10½ "	31½ "	5⅝ "	5⅛ "	14 "	8½ "	7 "	6½ "	100	19 "	7 x2½ "
3 "	70 00	77 00	26 00	4 25	10½ to 12 "	33½ "	6 "	5¾ "	16 "	9½ "	8 "	7½ "	100	21 "	8 x2½ "
3½ "	78 00	86 00	30 00	4 50	12 to 14 "	37½ "	6½ "	6½ "	17¼ "	10 "	9 "	8½ "			9 x2½ "
4 "	90 00	98 00	35 00	5 00	14 to 16 "	42 "	7 "	7¼ "	19¼ "	11 "	10 "	9½ "			10 x2½ "
4½ "	102 00	112 00	40 00	5 50	16 to 18 "	46 "	7 "	7½ "	20 "	11½ "	10½ "	10 "			11 x3 "
5 "	115 00	126 00	45 00	6 00	18 to 20 "	48 "	7¼ "	7⅝ "	20 "	12 "	11 "	10½ "			12 x3 "
5½ "	129 00	140 00	50 00	6 50	20 to 23 "	50½ "	8 "	8½ "	23 "	13 "	12½ "	12 "			14 x3½ "
6 "	144 00	156 00	55 00	7 00	23 to 26 "	55 "	8¼ "	9¼ "	24 "	14 "	13½ "	13 "			14 x3½ "
7 "	174 00	188 00	68 00	8 00	26 to 28 "	56½ "	9 "	9½ "	24 "	15½ "	15 "	14½ "			14 x3½ "
8 "	215 00	232 00	82 00	9 00	28 to 30 "	58¾ "	10 "	10⅛ "	26 "	17 "	16½ "	16 "			16 x4 "
9 "	245 00	265 00		10 00	30 to 32 "	64 "	11 "	11⅝ "	26 "	18 "		17 "			16 x4 "

GIFFARD INJECTOR

FOR

FEEDING BOILERS.

FOR PRICE AND CAPACITY, SEE PAGE 79.



Patent Self-Adjusting Injector.

In this instrument we have lately made important improvements, entirely overcoming all objections urged against the Injector for locomotive purposes. While it is working, variation of steam-pressure in the boiler does not affect its operation. The regulation of steam alone governs the quantity of water delivered by it. It will lift water from eight to twenty feet, depending upon size of instrument. When fed from a hydrant, or any elevated tank, under a pressure of, say, more than ten feet head, one of our water-regulating valves should be used.

Patent Self-Adjusting Injector,

WITHOUT STEAM SPINDLE.

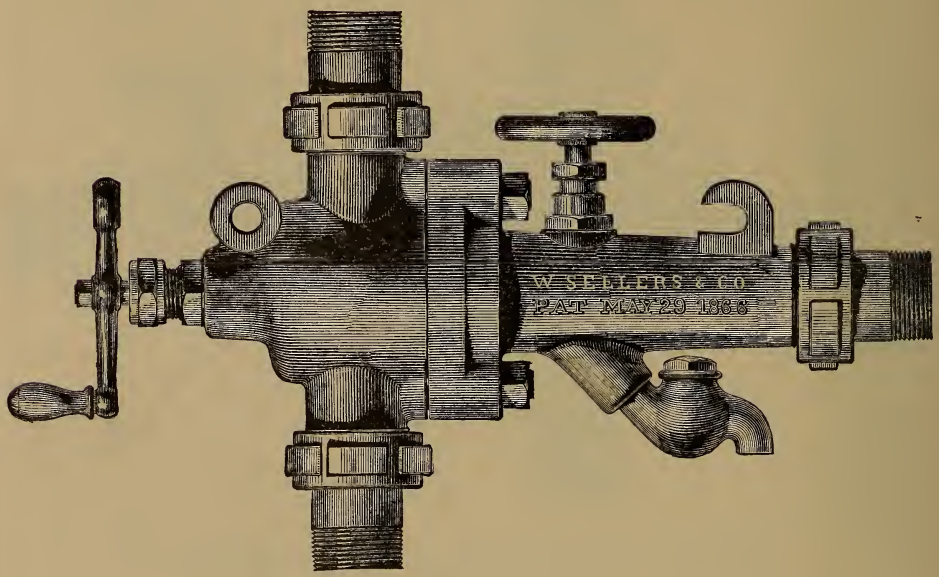
This instrument can be used when not required to lift the water, nor regulate the quantity.

GIFFARD INJECTOR

FOR

FEEDING BOILERS.

FOR PRICE AND CAPACITY, SEE PAGE 79.



Patent Adjustable Injector.

This instrument is recommended for stationary purposes, when the running pressure does not vary much. It will lift water, or it can be attached directly to the street-main and fed with water under pressure, *and does not require specially-constructed valves in putting up.*

Patent Adjustable Injector,

WITHOUT STEAM SPINDLE.

This instrument can be used when not required to lift the water nor regulate the quantity.

PRICE LIST AND TABLE OF CAPACITIES.

SELF-ADJUSTING INJECTORS.

SIZE.	PRICES. Self-Adjusting Nozzle. Brass Body Polish.	Self-Adjusting Nozzle. Iron Body.	Self-Adjusting Nozzle, without Steam Spindle. Brass Body Polish.	Self-Adjusting Nozzle, without Steam Spindle. Iron Body.	Size Pipe for Connect'ns	PRESSURE OF STEAM IN POUNDS. 10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
						CUBIC FEET OF WATER DISCHARGED PER HOUR.															
No.					in.																
2	$ 22	$ 18	$ 19	$ 15	¾	7.8	8.6	9.	9.8	10.5	11.2	11.8	12.4	13.2	13.9	14.5	15.2	15.8	16.5	17.1	17 8
3	30	25	27	22	¾	18.3	19.9	21.6	23.3	25.	26.7	28.3	30.	31.7	33.4	35.	36.8	38.5	40.	41.8	43.6
4	42	35	39	32	1	34.8	37.6	40.6	43.5	46.5	49.5	52.5	55.5	58.5	61.4	64.4	67.4	70.4	73.4	76.3	79.3
5	55	45	51	41	1¼	54.7	59.3	64.	68.7	73.3	78.	82.7	87.4	92.	96.7	102.3	106.	110.7	115.4	120.1	124.8
6	70	55	65	50	1¼	79.3	86.	92.8	99.5	106.3	113.	119.8	126.6	133.4	140.	146.9	153.7	160.4	167.2	174.	180.7
7	85	65	80	60	1½	108.3	117.5	126.8	136.	145.3	154.5	163.7	172.9	182.2	191.4	200.7	209.9	219.	228.4	237.6	246.9
8	100	75	94	69	2	141.7	153.9	166.	178.2	190.3	202.5	214.7	226.8	239.	251.	263.3	275.5	287.6	299.8	311.9	324.
9	115	85	108	78	2	179.7	195.	210.4	225.7	241.	256.4	271.8	287.	302 5	317.8	333.2	348.5	363.9	379.2	394.6	410.
10	130	95	122	87	2	222.	241.	260.	279.	297.9	316.9	335.9	354.8	373.8	392.8	411.7	430.7	449.7	468.6	487.6	506.6
12	150	115	140	105	2½	320.3	347.7	375.	402.4	429.7	457.	484.5	511.8	539.2	566.5	593.9	621.3	648.6	676.	703.3	730.7

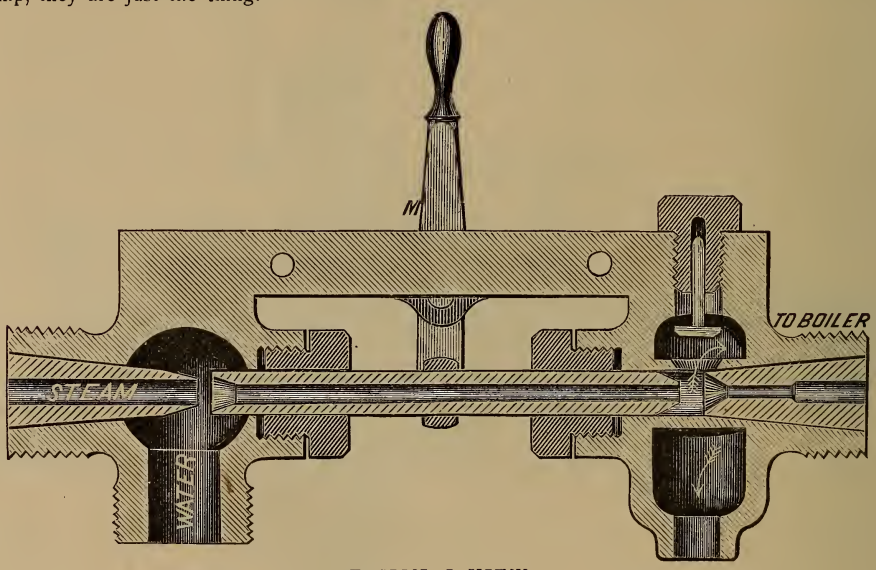
PRICES OF DETAILS OF STATIONARY ATTACHMENTS.

SIZE OF INJECTOR.	No. 2.	No. 3.	No. 4.	Nos. 5 & 6.	No. 7.	Nos. 8, 9 & 10	No. 12.
Starting Valve,	$5 00	$6 00	$7 00	$8 75	$10 50	$13 50	$20 00
Regulating Valve,	3 00	3 50	4 00	5 00	6 00	9 00	14 00
Alarm Check Valve,	1 10	1 10	1 10	1 25	1 25	1 25	1 25
Drip-pan for Waste-pipe,	35	35	35	62	75	90	1 25
Attachments complete with connections to Injector, as shown above,	10 00	11 50	13 25	16 75	20 00	27 25	39 00

Rue's Little Giant Injector.

THE GREAT BOILER FEEDER.

These Injectors have been in the market about a year, and have been wonderfully successful. They are guaranteed by the manufacturers to be ahead of any Injector in the market, and we are authorised to take back any that do not do all that is claimed for them You may order them in perfect confidence, as you can, after a reasonable trial, return them if not satisfactory The sizes correspond with those of the Gifford. If you have ever used an Injector send for the same size. With a Pump and an Injector, every locomotive or other boiler is complete and ready for any contingency, and every large establishment should be so provided. On small boilers, where a Pump will not work handily, or on boilers used for heating, &c., where there is no machinery to run a Pump, they are just the thing.



SECTIONAL VIEW.

PRICE LIST.

These Injectors are made wholly of brass, and are highly finished. All fittings extra.

Number.	Price.	Size of Steam and Water-pipe Connections.	Nominal Horse Power at 70 lbs. Pressure.
2	$ 30	½ inch.	20
3	45	¾ "	30
4	55	1 "	55
5	70	1¼ "	85
6	85	1¼ "	125
7	100	1½ "	175
8	120	2 "	225
9	140	2 "	285
10	190	2 "	350
12	240	2½ "	500
14	300	2½ "	700
16	360	3 "	900
18	420	3 "	1150
20	480	3½ "	1400

The connections are fitted with an ordinary globe or steam valve on the steam pipe, and a stop cock on the water pipe.

For Injectors with the lifting attachment, a valve that opens with a quick motion is furnished at $5 each, for all sizes.

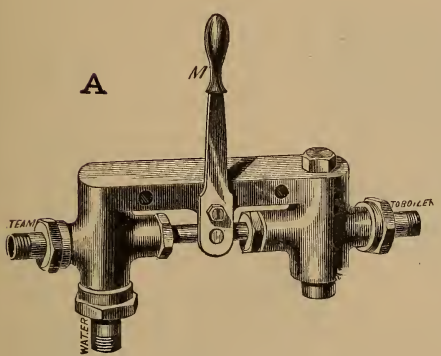
Each Injector thoroughly tested and guaranteed to work as claimed.

At 10 lbs pressure each Injector will do ⅓ less, and at 150 lbs. will do ½ more than the table above.

CHARLES REUTER. J. D. MALLORY.

Rues's Little Giant Injector.

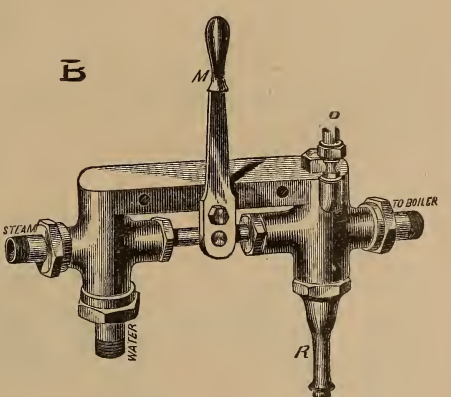
THE GREAT BOILER FEEDER.



Made wholly of brass; will not rust. Simple in construction; easy of adjustment; reliable. Working equally well under high or low pressure of steam.

A.—Are for stationary and other Boilers where the water is supplied from a tank or pipes, where there is a head of water or pressure.

B.—Are for Locomotive and other Boilers where the water must be lifted. A separate steam pipe is applied to the lifting attachment at P.



This Injector, made under the patents of Samuel Rue, Jr., has been thoroughly tested, and has proven its superiority over all others in the following points:

1. Simplicity, ease of adjustment, and durability; it does not rust or wear.

2. It works under any pressure of steam or water, and can be worked either to its full or partial capacity; after starting it, an adjustment of the handle M regulates it.

3. Reliability. It will work under almost any circumstances without breaking by jarring, roughness of roads, or variation of steam or water supply.

4. The great command over it, by means of the adjustable tube, will enable you to feed the boiler long before you would have steam enough to run a pump.

5. When there is no steam pressure in the boiler, by closing the overflow the water will flow through the Injector into the boiler, saving a separate pipe to the boiler.

6. Being made wholly of brass, with but few movable parts and little wear, it will not get out of order or need repairs, and but few extra fittings are necessary.

7. The water being put into the boiler at 210 degrees Fahrenheit, it can be put in at any part of the boiler, even in the side of the fire box, saving much pipe and not injuring the boiler.

8. It can be cleaned without taking apart. It is easily disconnected from the boiler, and a wire run through it will remove any obstruction.

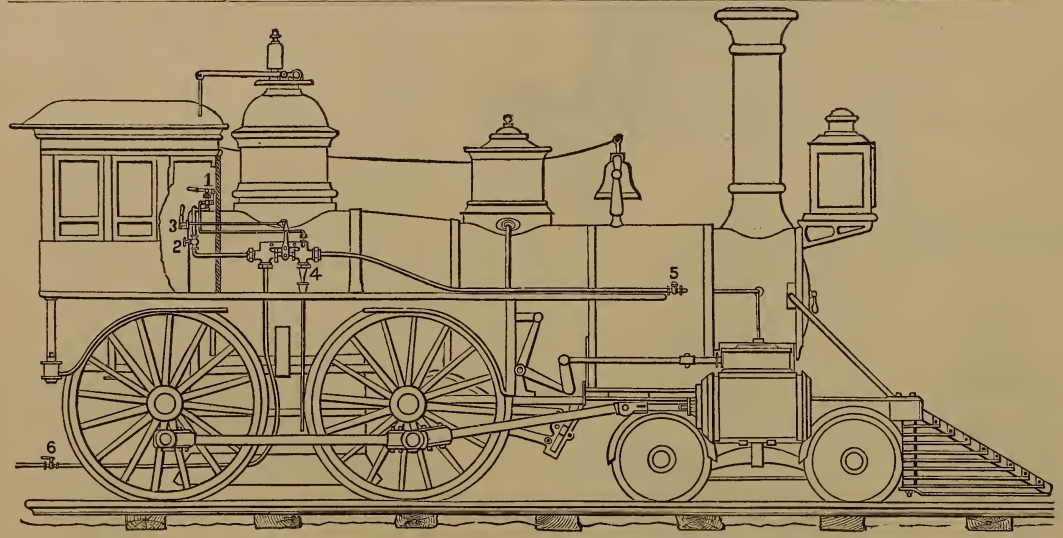
9. Saving of Fuel, &c. Used as a Feeder, with a pressure from a tank, it is simple in form, and the whole of the heat of the steam used to operate it is communicated to the water—and experience has shown a saving of fuel, oil, packing and repairs, as compared with a pump—and the water is put into the boiler much hotter than any heater will make it.

10. Where there is no pressure and the water must be lifted, a small steam pipe is attached at P, and a steam jet thrown into the overflow pipe, and all hot water or air drawn out of the Injector and the water lifted; it therefore goes to work promptly without waiting for it to cool and form a vacuum as in other Injectors, or working at it to get the jet to form a vacuum.

RUE'S LITTLE GIANT INJECTOR.

THE GREAT BOILER FEEDER.

Guaranteed to be the Best Locomotive Injector in Use. Try It.



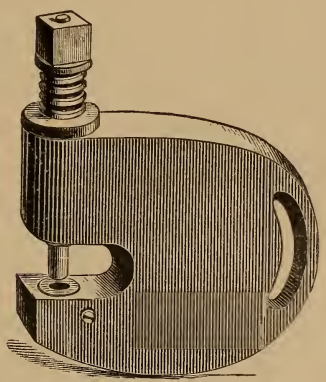
No. 1. Jet Valve. 2. Steam Valve. 3. Lever for Regulating Supply. 4. Drip. 5. Check Valve. 6. Cold Water Pipe Cock.

The following Railroads have used it—ask how they like it:

Alleghany Valley,
Central Railroad of New Jersey,
Pennsylvania Central,
Phila., Wilmington and Baltimore,
Toledo, Wabash and Western,
Erie Railroad,
Philadelphia and Reading,
Richmond and Danville,
Seaboard and Roanoke,
Richmond, Fredericksburg and Potomac,
Cleveland, Columbus, Cincinnati and Indianapolis,
Long Island,
Chicago and Alton,
St. Louis, Kansas City, and Northern,
St. Louis and Iron Mountain,
Ohio and Mississippi.

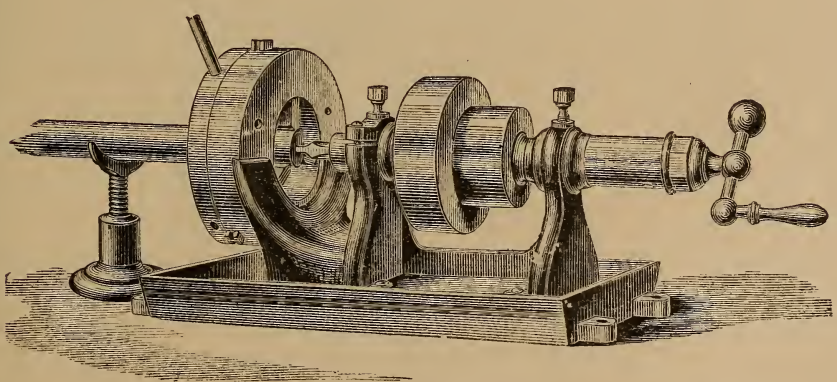
It can be put into the Cab, and will work hot or cold. We will guarantee it to start instantly; it can be shut off and started at once, no matter how hot. Will do all any other Injector will do and a good deal more. You may try it; if it does not please you, return it. If you try it, like it, and pay for it, and afterwards you find it does not continue to work well, you may return it, and we will refund the money.

BOILER PUNCH.



Price—Small, $40. *Large, $45.*

CENTERING MACHINES.

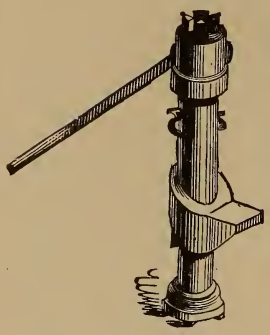


A combination of a universal Scroll Chuck with a traversing spindle carrying a drill.

No. 1 centres	all sizes round iron	from	¼	to 3¼	in., . . .	$55 00
" 2	"	"	"	¼	to 4½ " . . .	80 00
" 3	"	"	"	¼	to 5½ " . . .	135 00
" 4	"	"	"	2	to 7½ " . . .	140 00

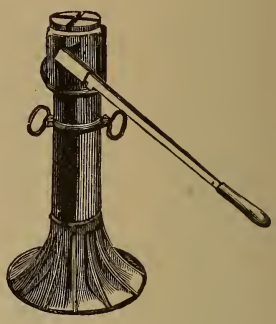
Hangers and Counter Shafts $10 extra, except in No. 3, which is included in price above. No. 3 is set on a bed 3 feet long, with iron legs.

Dudgeon's Hydraulic Jacks.



ALSO

JACKS FOR PRESSING ON CAR WHEELS AND CRANK PINS MADE TO ORDER.



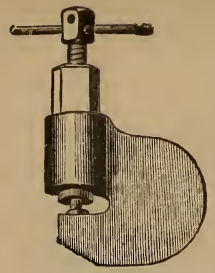
To lift or press	4	tons, and run out	12	inches, and lift from the ground,	. . .	$60	00
" "	4	" "	24	" " " "	. . .	65	00
" "	7	" "	12	"	. . . . .	70	00
" "	7	" "	24	"	. . . . .	75	00
" "	7	" "	12	" and lift from the ground,	. . .	85	00
" "	7	" "	12	" with wide base for locomotive shops,	.	80	00
" "	7	" "	18	" " " " "	. .	85	00
" "	7	" "	24	" and lift from the ground,	. . .	90	00
" "	10	" "	12	"	. . . . .	80	00
" "	10	" "	18	"	. . . . .	100	00
" "	10	" "	12	" and lift from the ground,	. . .	100	00
" "	10	" "	12	" with wide base for locomotive shops,	.	95	00
" "	10	" "	18	" " " " "	. .	110	00
" "	15	" "	12	"	. . . . .	100	00
" "	15	" "	12	" with wide base for locomotive shops,	.	125	00
" "	15	" "	12	" and lift from the ground,	. . .	150	00
" "	15	" "	18	" with wide base for locomotive shops,	.	150	00
" "	20	" "	12	" and lift from the ground,	. . .	200	00
" "	20	" "	12	" with wide base for locomotive shops,	.	150	00
" "	20	" "	12	"	. . . . .	120	00
" "	30	" "	9	"	. . . . .	150	00
" "	30	" "	12	"	. . . . .	175	00
" "	30	" "	9	" with wide base for locomotive shops,	.	170	00
" "	30	" "	12	" " " " "	. .	200	00
" "	30	" "	12	" and lift from the ground,	. . .	250	00
" "	60	" "	9	" with cistern and force-pump outside,	.	250	00
" "	60	" "	12	"	. . . . .	275	00
" "	90	" "	9	" with cistern and force-pump outside,	.	350	00
" "	90	" "	12	"	. . . . .	375	00
" "	100	" "	12	"	. . . . .	400	00
" "	120	" "	7	"	. . . . .	450	00

LARGER SIZES MADE TO ORDER.

DIRECTIONS.—This Jack or Press appears to the eye, when depressed, a simple cylinder, and when elevated, as one cylinder sliding within another. It is from two to eight or more inches in diameter, according to the power desired, with an enlarged head, (attached to the inner cylinder, which is the ram,) having a socket for the reception of the lever by which the force-pump is worked. The ram, with its head, contains just so much fluid as is required to fill the vacancy in the cylinder caused by the raising of the ram in the act of lifting ; and when this is accomplished, the water is returned into its original recess by a valve operated by the lever that works the pump. The force-pump and valves are contained inside the ram. The lever is detached, and may be put on at pleasure.

The ground lifting attachment is a tube screwed into the lower side of the head, and passing down to the bottom of the press, outside of the cylinder, on the lower end of which is a claw that supports the weight to be raised.

These Jacks are light, portable, and of easy application, a Jack to raise four tons weighing not more than 50 lbs., and one to raise sixty tons, 200 lbs. They are all worked by the labor of one man, who is capable of raising ten tons through a space of one foot in one and a half minutes, or sixty tons the same distance in ten minutes.



DUDGEON'S

PATENT HYDRAULIC PUNCH

For Boiler Makers, Machinists and Iron Ship Building.

The above cut represents one of these Hydraulic Punches, for punching iron, and for other purposes where a limited amount of movement and great power is required. These punches are simple in their construction, being without valves or the force-pump in common use in all other Hydraulic Presses.

The Punch represented by the above cut is for punching through three-eights inch boiler-iron a hole five-eights of an inch in diameter, and will, with one man to work it, do as much work as can be done by two men with a common hand-screw punch, besides being applicable in many places where a screw punch cannot be used.

SIZES AND PRICES.

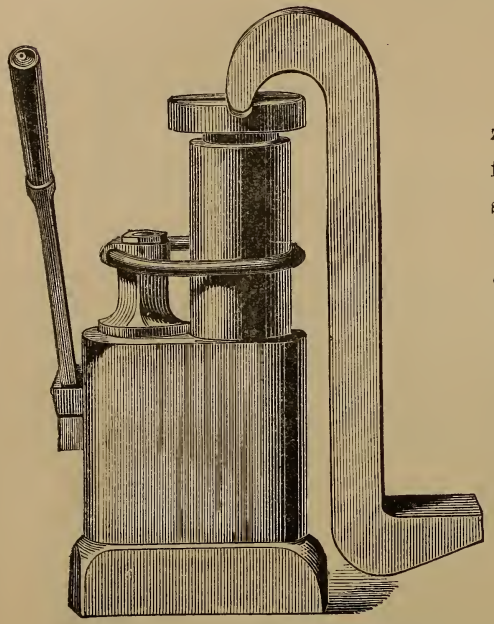
To punch	$\frac{1}{4}$	iron for	$\frac{5}{8}$	rivets or bolts,	. . . . .	$ 70 00
To "	$\frac{3}{8}$	"	$\frac{5}{8}$	"	. . . . .	80 00
To "	$\frac{1}{2}$	"	$\frac{5}{8}$	"	. . . . .	100 00
To "	$\frac{1}{2}$	"	$\frac{3}{4}$	"	. . . . .	120 00
To "	$\frac{5}{8}$	"	$\frac{3}{4}$	"	. . . . .	150 00
To "	$\frac{3}{4}$	"	$\frac{7}{8}$	"	. . . . .	200 00

LARGER ONES MADE TO ORDER.

DIRECTIONS FOR USE.

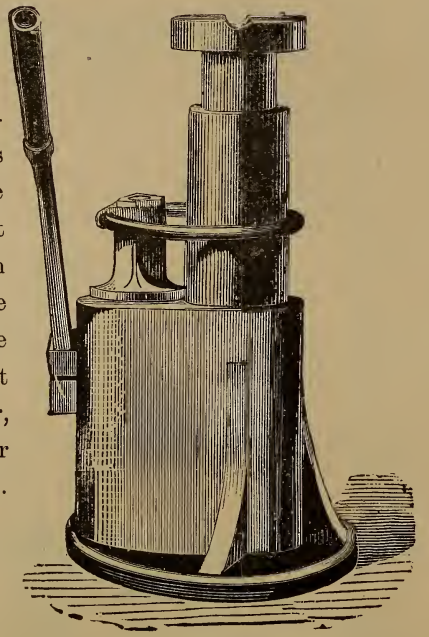
To fill the Punch, draw the Ram containing the Punch clear up with the lever, take out the screw and fill with good sperm oil, replace the screw and run it in until the iron is punched. Then run back the screw far enough to allow the Ram to be pryed up the thickness of the iron you are punching.

HORIZONTAL JACKS.



CLAW OR GROUND-LIFTING JACK.

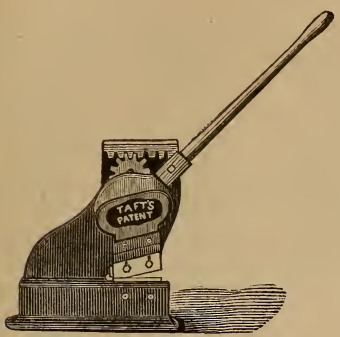
These Jacks run out their entire length, horizontal or vertical, and will run out 6 inches farther than the old kind, while standing the same height, that is to say, a Jack to run out 18 inches will measure little if any more (when down) than one that runs out 12 inches; the Claw comes much nearer to the ground, is made of wrought iron, and can be taken off when not needed; they are less liable to get out of order, are easily repaired, and are considered a far superior Jack by all who have used them. Prices and sizes same as the old kind.



BROAD BASE OR LOCOMOTIVE JACK.

10, 15 or 20 Tons of this style, to run out 2 feet, made to order.

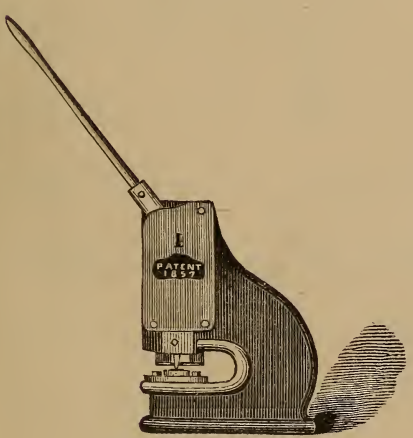
Taft's Punching and Shearing Machines.



No. 1 SHEAR.

PATENT HAND SHEAR.

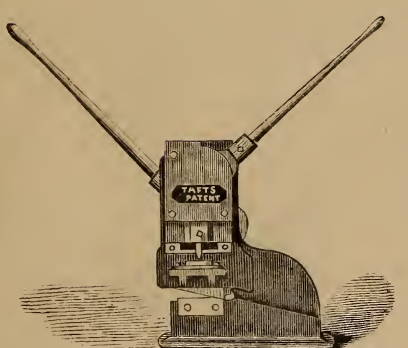
No. 1 cuts $\frac{1}{8}$ inch plate iron, . . . $25 00
2 " 3-16 " . . . 45 00
3 " $\frac{1}{4}$ " . . . 75 00
4 will cut 5-16 inch plate iron, . . 105 00
5 " $\frac{3}{8}$ " " . . . 145 00
5$\frac{1}{2}$ " 1 " round or square bars, and $\frac{1}{2}$x6 inch flat bars, with one man, . 208 00
6 cuts 7-16 inch plate iron, . . . 208 00
6$\frac{1}{2}$ " $\frac{1}{2}$ " " . . . 277 00
8 " 9-16 " " . . . 345 00
9 will cut 1$\frac{1}{4}$ round, or $\frac{5}{8}$x6 inch flat bars, 350 00



No. 1 PUNCH.

PATENT HAND PUNCH.

No. 1 punches $\frac{1}{8}$ inch hole in $\frac{1}{8}$ inch plate iron, and 1$\frac{1}{4}$ inches from centre of hole to edge of plate, ... $25 00
No. 2 punches 3-16 inch hole in 3-16 inch plate iron, and 2$\frac{1}{4}$ inches from centre of hole to edge of plate, ... 45 00
No. 3 punches $\frac{1}{4}$ inch hole in $\frac{1}{4}$ inch plate iron, and 3$\frac{1}{2}$ inches from centre of hole to edge of plate 75 00
No. 4 punches 5-16 inch hole in 5-16 inch plate iron, and 4 inches from centre of hole to edge of plate, ... 105 00
No. 5 punches $\frac{3}{8}$ inch hole in $\frac{3}{8}$ inch plate iron, and 6$\frac{1}{2}$ inches from centre of hole to edge of plate, ... 145 00
No. 6 punches 7-16 inch hole in 7-16 inch plate iron, and 6$\frac{1}{2}$ inches from edge of plate, 208 00
No. 7 punches $\frac{1}{2}$ inch hole in $\frac{1}{2}$ inch plate iron, and 6$\frac{1}{2}$ inches from edge, . . . 277 00
No. 8 punches 9-16 inch hole in 9-16 inch iron, and 6$\frac{1}{2}$ inches from edge, . . . 350 00

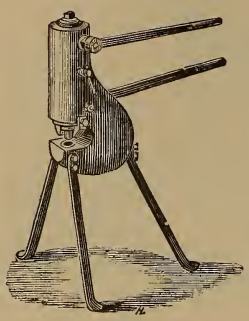


No. 1 SHEAR & PUNCH COMBINED.

PATENT COMBINED SHEAR AND PUNCH.

No. 1 cuts and punches $\frac{1}{8}$ inch plate iron—punches 2 inches from edge of plate, $48 00
No. 2 cuts and punches 3-16 inch plate iron—punches 1$\frac{1}{2}$ inch from edge of plate, 83 00
No. 3 cuts and punches $\frac{1}{4}$ in. plate iron—punches 1$\frac{1}{2}$ inch from edge of plate, . . 138 00
No. 4 cuts and punches 5-16 inch plate iron—punches 2 inches from edge of plate, 195 00
No. 5 cuts and punches $\frac{3}{8}$ inch plate iron—punches 2 inches from edge of plate, 264 00
No. 6 cuts and punches 7-16 inch plate iron—punches 2$\frac{1}{2}$ inches from edge of plate, 350 00
No. 7 cuts and punches $\frac{1}{2}$ inch plate iron—punches 2$\frac{1}{2}$ inches from edge of plate, 390 00

TANGYE'S
PATENT ENGLISH HYDRAULIC PUNCHING BEARS.



These powerful Hydraulic Punching Bears are recommended as being much quicker and easier in operation than any other kind yet introduced, while they are equally portable, durable and compact. They can be worked in any position, and the larger sizes can be adapted for steam power if required. The legs can be easily detached, when necessary for use in confined situations.

A large number of these Bears have been supplied for Government and Railway use, and are found to give general satisfaction.

In using these Bears it is only necessary to screw up the stop-valve and work the upper lever until the iron is punched through, then unscrew the stop-valve and depress the lower lever, which throws up the punch for repeating the operetion.

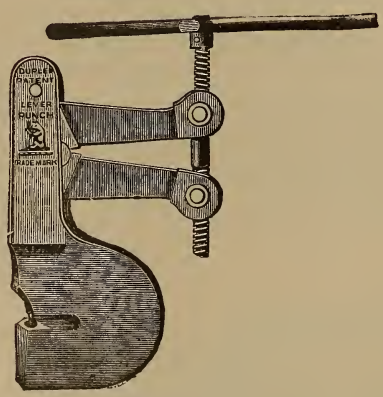
PRICES. Including One Punch and Die of the Largest Size.

No. 1	will punch up to	¾	in. through	½	in. plate	64 lbs		$120 00
" 2	"	" 1	"	" ¾	"	120	"	175 00
" 3	"	" 1¼	"	" 1	"	320	"	310 00
" 4	"	for 1 in. Steel Rails						410 00

Space from centre of Punch to back of gap, 1¾ in. Add 15 per cent. to price for each inch extra.
Extra Punches and Dies, Round, $6.00. Oval and Square, $12.00 per pair.

WITH No. 1 MACHINE A MAN CAN PUNCH THREE HOLES IN ONE MINUTE.

Patent "Duplex" Lever Punches.



OPEN MOUTH PUNCH.

For Iron Ship Builders, Boiler Makers, Engineers, Railway Companies, and all Workers in Iron.

The open mouth Punches will be found invaluable to the above trades. They possess great power, and will punch the heaviest Boiler and Ship Plates, Angle, and other Iron with ease and great rapidity.

The close mouth Punches have been designed expressly for Punching Iron and Steel Rails, and have been supplied to several Railway Companies, at home and abroad.

These Punches require no skilled labor to use them, nor are they liable to break or get out of repair.

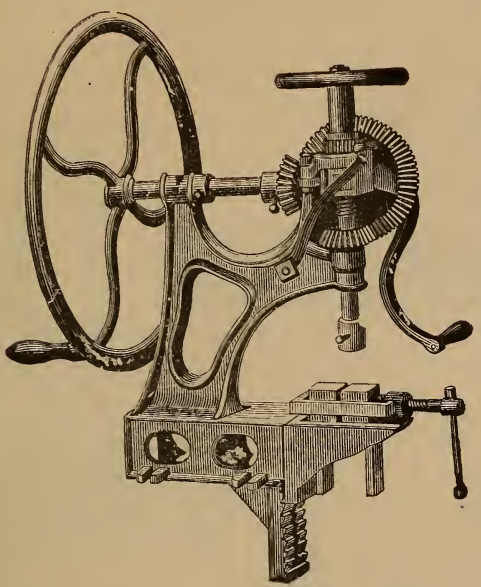
They are made of the very best materials, and exhibit the highest mechanical ingenuity in design and construction. They are so simple and their application so apparent that directions for use are quite unnecessary.

PRICES. Including one Round Punch and Die of the largest size.

	OPEN MOUTH.	Centre of Punch to back of gap.	
No. 1.	To Punch ½ in. through ¼ in. plate,	1⅛ in.	$ 70 00
No. 2.	" ¾ in. " ⅜ in. "	1½ in.	90 00
No. 3.	" ¾ in. " ⅝ in. "	2 in.	125 00
	CLOSED MOUTH.		
No. 1.	To Punch 1½ in. hole through ¾ in. Iron Rail		300 00
No. 2.	" 1¾ in. " " ½ in. Steel "		300 00

Extra Punches and Dies, Round, $6.00. Oval and Square, $12.00 per pair.

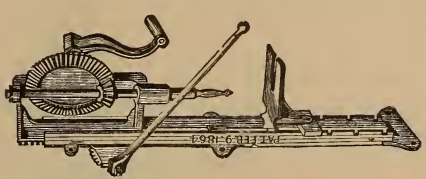
Coe's Patent Upright Hand Drill.



Suitable for Carriage, Wagon and ordinary Blacksmith work, and for drilling any hole up to one inch. Weight, 130 pounds.

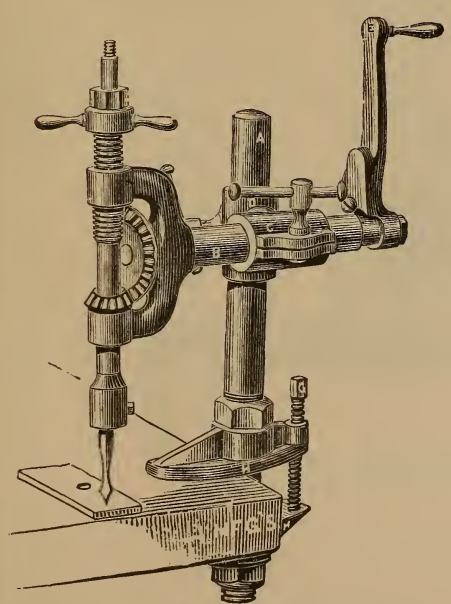
PRICE $40.00.

Stiver's Patent Combination Hand Drilling Machine.



PRICE $20.00.

The Universal Angular Drilling Machine.



THEY WILL BORE AT ANY ANGLE.

PRICES.

No. 1, Upright Shaft, $1\frac{1}{4}$ inches in diameter, 20 inches long, weighs 26 lbs., will drill a $\frac{5}{8}$ inch hole, $34 00

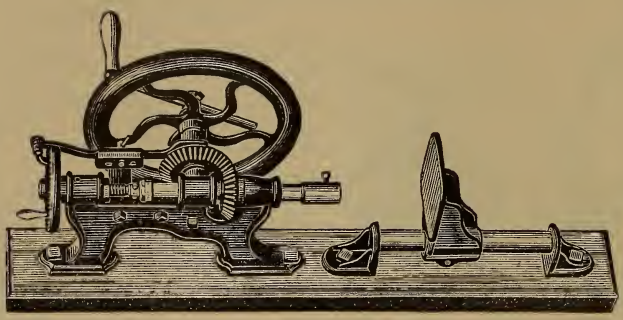
No. 2, Upright Shaft, $1\frac{1}{2}$ inches in diameter, 24 inches long, weighs 52 lbs., will drill a $\frac{3}{4}$ inch hole, 38 00

No. 3, Upright Shaft, 2 inches in diameter, 27 inches long, weighs 100 lbs., will drill a $1\frac{1}{4}$ inch hole, geared back, $\frac{1}{3}$, ... 65 00

CHARLES REUTER. J. D. MALLORY.

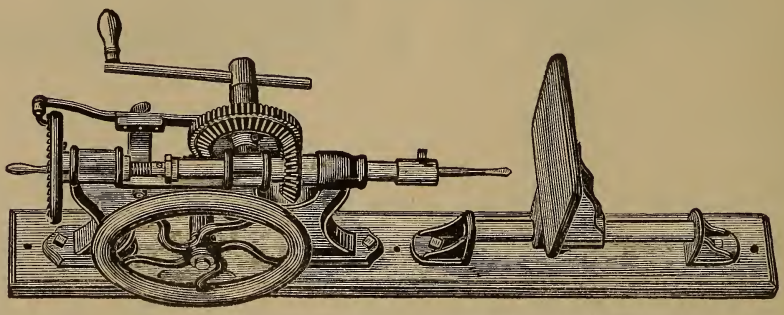
No. 1 Upright Self-Feeding Drill.

DRILL FROM ⅛ INCH TO ¾ INCH HOLE.



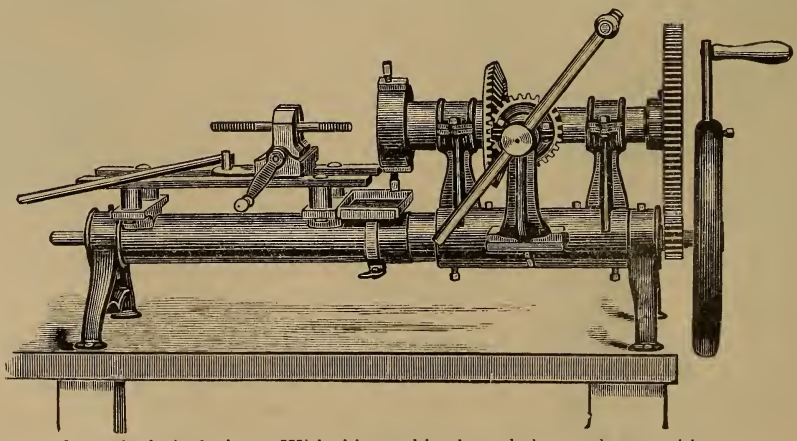
The above has Swing-table like No. 2. Length, 42 inches. Weight, 95 lbs. Price, $35.00 with Balance-Wheel ; $33.00 without Balance-Wheel.

No. 2 Upright Self-Feeding Drill.



Length, 54 inches. Weight, 160 lbs. Price, $50.00.

No. 8 HAND BOLT CUTTER.

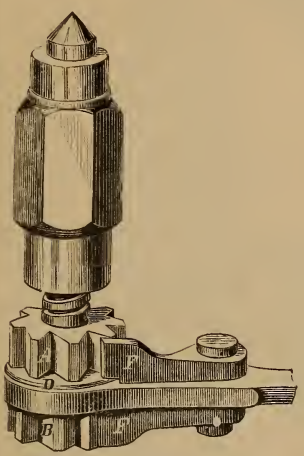


Cuts from ¼ to 1 inch, inclusive. With this machine large bolts can be cut with greater ease than by any other hand machine now in use. Price of machine, $60.00. Taps and Dies extra.

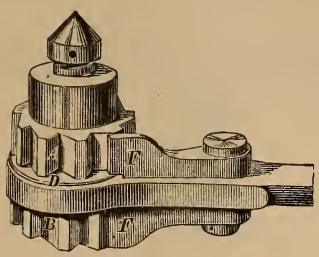
Weston's Improved Differential Ratchet Drills.

WROUGHT IRON HANDLES.

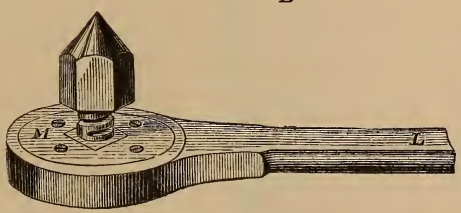
PATENTED MARCH 3, 1868.



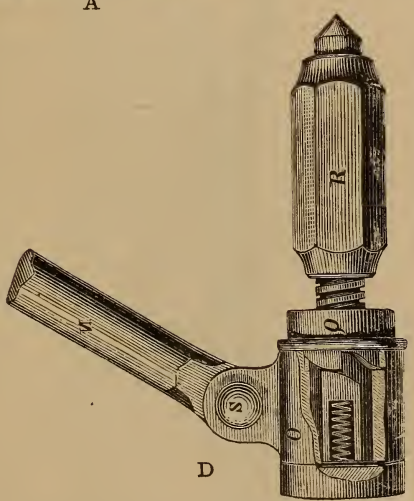
A



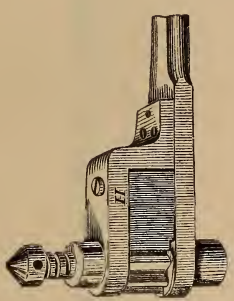
B



C



D



F

A.—The ordinary Drill for general purposes. B.—The Dumpy Drill for confined spaces. C.—The Locomotive Drill, a most convenient tool in cases where even the Dumpy takes up too much room. D.—The Swivel Drill. E.—Angle Iron Drill. This has always been a desideratum, and is now introduced for the first time. It will work within half an inch of the angle.

PRICES OF WESTON'S RATCHET DRILLS.

A	each.
12 inch	$8 50
14 inch	9 00
16 inch	9 75
18 inch	11 00
20 inch	11 75
22 inch	13 50

B	each.
14 inch	$9 00

C	
14 inch	$13 50

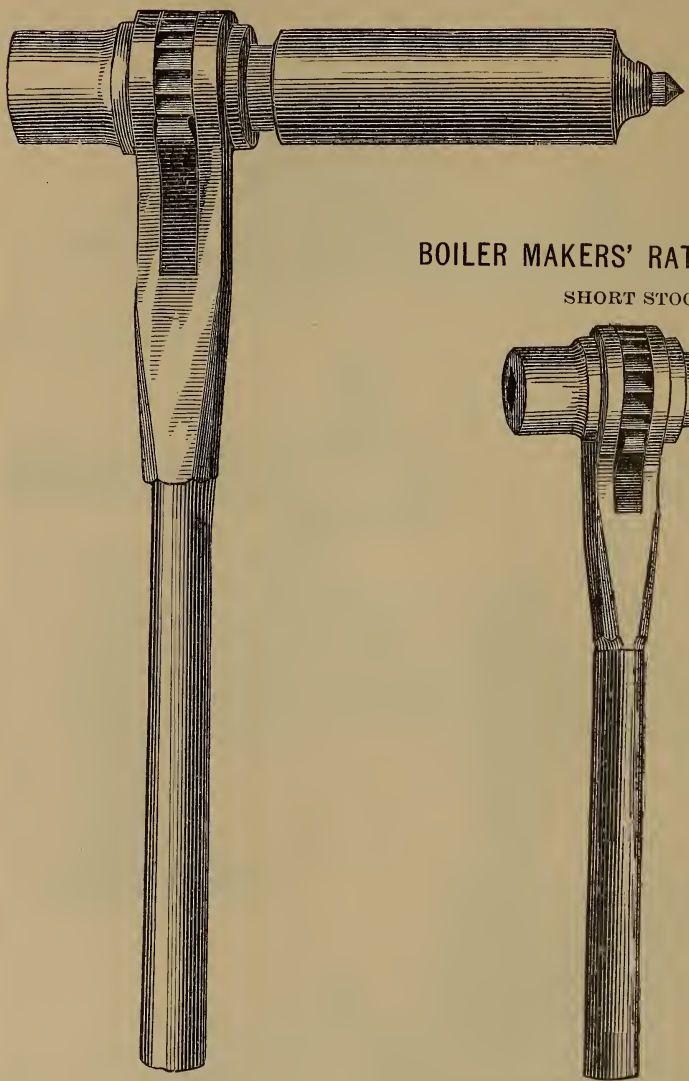
D	
12 inch	$13 50

E	each.
18 inch	$9 75

F	
12 inch	$23 00

CHARLES REUTER. J. D. MALLORY.

PACKER'S RATCHET DRILLS.



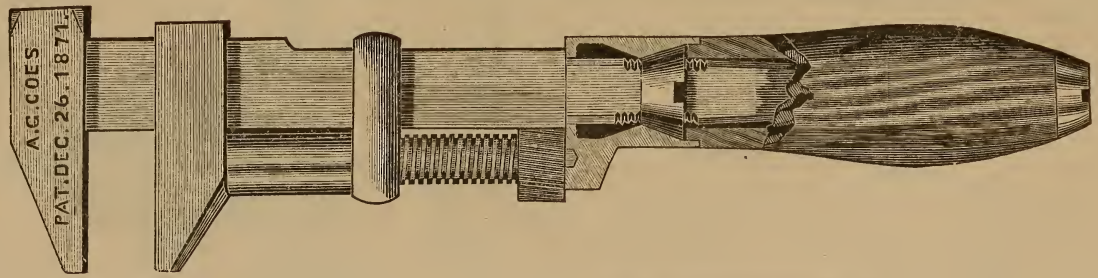
BOILER MAKERS' RATCHET DRILLS.

SHORT STOCK.

No. 1, 10 inch handle, . . . $ 9 00 each.
" 2, 12 " . . . 10 50 "

No.	1	2	3	4	5
Length of Handle, . . .	10	12	15	17	20
	$10 50	$13 50	$16 00	$19 00	$23 00

COE'S PATENT SCREW WRENCH.



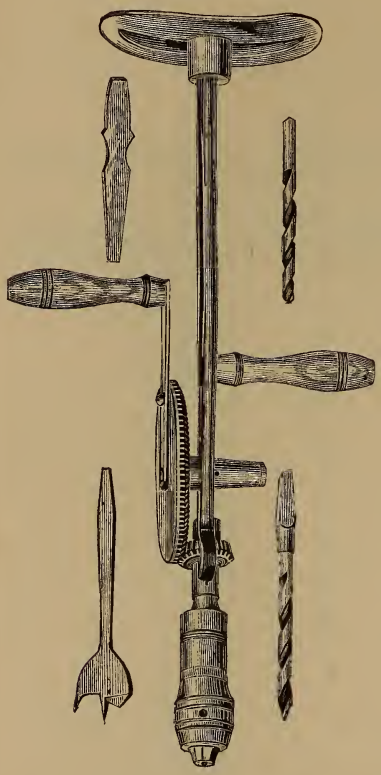
Size, inches,	6	8	10	12	15	18	21
Price, black,	$ 9 00	$10 00	$12 00	$14 00	$24 00	$30 00	$36 per doz.
Price, bright,	10 00	11 00	14 00	16 00	26 00	32 00	38 "

LINDSAY'S WRENCHES.

Size.	Black.	Per doz.
10 Inch,		$12 00
12 "		14 00
15 "		24 00

BAXTER'S ADJUSTABLE S. WRENCH.

4 inch,	price each,		$ 75
6 "	"		1 00
8 "	"		1 25
10 "	"		2 00
12 "	"		2 50
15 "	"		3 00



IMPROVED

Breast Drill.

In the light of all the modern improvements, we have made the nicest Drill-stock in market, and attached to it a new and very ingenious Chuck which will centre and hold perfectly round, square, or flat tool-shanks from $\frac{1}{16}$ to $\frac{1}{2}$ inch. The jaws are made of steel, and will hold any shape tang.

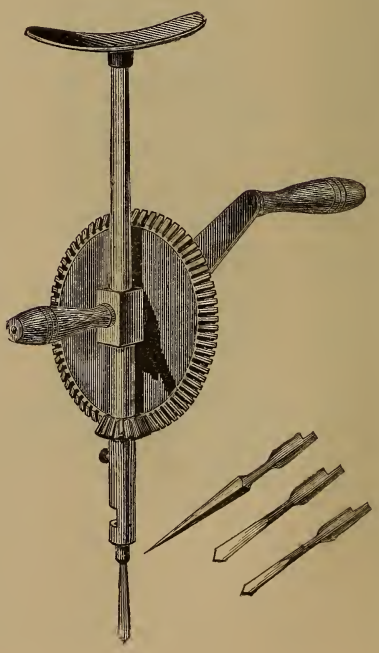
The tools in the cut do not go with the Drill, but are placed there to show some of the shapes that the Chuck will hold.

PRICE $3.50 EACH.

Breast Drill.

This will be found a useful and convenient Tool for small jobbing work, for drilling and reaming small holes.

Price, No. 1, ...	$4 00
" " 2, ...	5 00
" " 3, ...	6 00

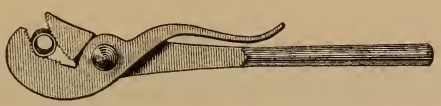


Blacksmith's Horizontal Drills.

No. 1, ...	$5 00
" 2, ...	6 00

THE BARWICK

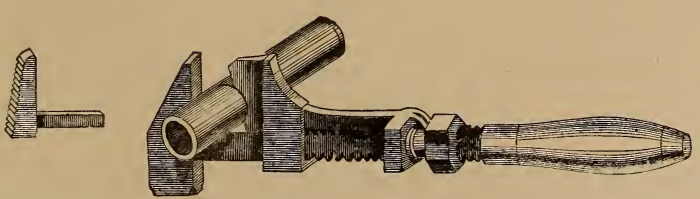
Patent Wrench and Pipe Tongs.



No. 0,	Nickle Plated, takes from No. 7 Wire to ½ inch Pipe, . .	$ 2 25
" 1,	Finished and polished takes from Gas Burner to ¾ inch Pipe,	3 00
" 2,	Ground and Finished, " " ½ inch to 1¼ inch Pipe, .	4 00
" 3,	" " " " " 1 " 2 " .	5 00
" 4,	" " " " " 1½ " 3 " .	9 00
" 5,	" " " " " 2½ " 4 " .	12 00

WEBSTER'S

PATENT COMBINED WRENCH, PIPE WRENCH & PIPE CUTTER.



12 inch,	with Tools for Pipe,	⅛	inch to	¾	inch.	Price,	.	.	.	$4 50
15	" " "	⅛	"	1½	"	"	.	.	.	5 50
18	" " "	⅛	"	2	"	"	.	.	.	6 50
21	" " "	⅛	"	2½	"	"	.	.	.	7 50

EXTRA CUTTERS.

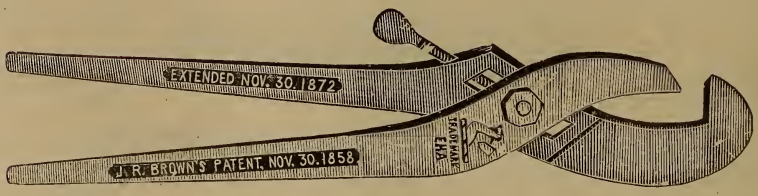
12 inch, 60 cents. | 15 inch and 18 inch, 75 cents. | 21 inch, 80 cents.

EXTRA CLASPS.

12 inch, 60 cents. | 15 inch and 18 inch, 75 cents. | 21 inch, 80 cents.

BROWN'S

PATENT PIPE TONGS.



No. 1,	for Pipe	⅛ to ¾.	Price,	$ 3 00
" 1½,	"	⅜ to 1,	"	3 50
" 2,	"	½ to 1¼,	"	4 00
" 3,	"	1 to 2,	"	5 00
" 4,	"	1½ to 3,	"	9 00
" 5,	"	2½ to 4,	"	12 00
" 6,	"	3 to 5,	"	25 00
" 7,	"	4 to 7,	"	35 00

STANWOOD'S

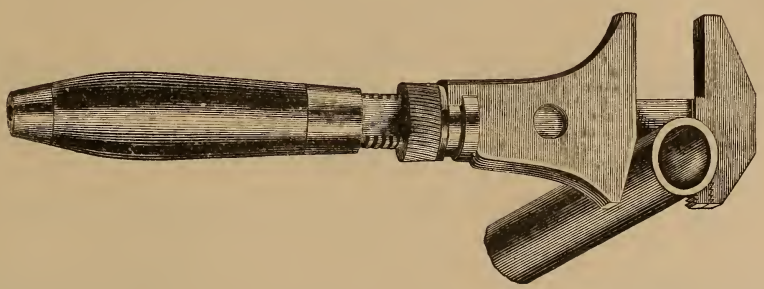
Patent Pipe Cutter.

No. 1 cuts ⅛ to ¾ inch,	$ 7 50
" 2 cuts 1 to 2 inch,	9 00
" 3 cuts 2 to 3 inch,	18 00

Extra Cutters—No. 1, $0.65; No. 2, $0.75; No. 3, $1.25.

DAVIS'

Patent Duplex Wrench.



A tool well made of best materials, and suitable for pipes and cylindrical bodies, as well as nuts of all shapes.

FOR PIPES AND RODS.

8 inch,	$\frac{1}{8}$ to $\frac{1}{2}$ inch, per doz.	. . . . .	$15 00
12 "	$\frac{1}{8}$ to 1 " "	. . . . .	21 00
15 "	$\frac{1}{8}$ to $1\frac{3}{4}$ " "	. . . . .	30 00
18 "	$\frac{1}{8}$ to $2\frac{3}{4}$ " "	. . . . .	48 00
21 "	in course of manufacture.		

Reversible Steel Jaws, . . . $3.00 per doz.

Upright Hand Drill Press.

(PORTABLE.)

Suitable for Machinists, Gas Fitters, Blacksmiths, Stove or Sheet Iron Workers, &c., with Drills for the following sizes: $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$ and 1 inch.

Price, ... $25 00

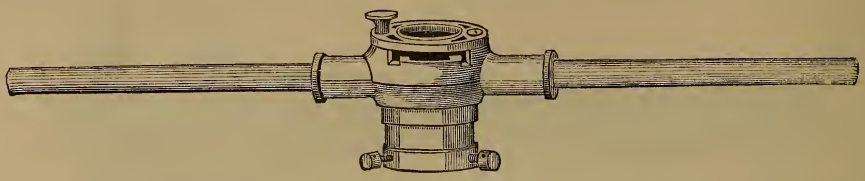
Foster's Patent Wrenches

FOR GAS FITTERS.

10 inch, each,	. . . . .	$1 75
14 " "	. . . . .	2 50
18 " "	. . . . .	3 50

STOCKS AND DIES.

MORRIS, TASKER & CO.'S.



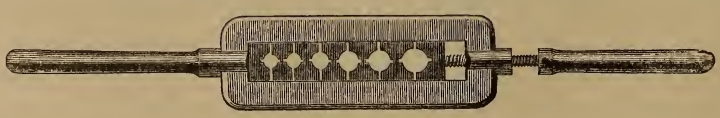
No. 1, Screwing Stocks, complete with	¼ in., ⅜ in., ½ in. Solid Dies, (2x½)	$7 05
" 2, " " "	" ¾ in., 1 in., Solid Dies, (3x¾) . .	8 50
" 3, " " "	" 1¼ in., 1½ in., 2 in., Solid Dies, (4x1)	19 65
" 4, " " "	for 2½ and 3 in., Tube, ...	35 00
" 5, " " "	" 3½ and 4 in., Tube, ...	40 00

REUTER & MALLORY'S

IMPROVED STOCK AND DIES.

No. 1, with ¼, ⅜, ½, ¾, and 1 inch Dies, (2½x¾) . . .	$14 00
" 2, " 1¼, 1½, and 2 inch Dies, (4x1)	17 00

Stocks for Cutting Brass Pipe or Tubing.



This Stock has six open Dies, for screwing ⅜, ½, ⅝, ¾, ⅞ and 1 inch Brass Pipe, without change of Dies. Price, ... $12 00

SOLID DIES—Right or Left Hand.

STANDARD PIPE SIZES AND THREADS.

Pipe size, ...	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Square of Die. .	2	2	2	2	3	3	4	4	4	5	5
Thickness of Die.	½	½	½	½	¾	¾	1	1	1	1¼	1¼
Price, ... $	1 43	1 43	1 43	1 43	2 30	2 30	4 20	4 20	4 20	12 00	13 00

TAPS—Right or Left.

Taper or Straight Head.

Pipe size,	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Price, $	0 75	0 75	0 75	0 95	1 32	1 68	1 91	2 31	3 41	5 22	7 37	9 95	13 34

REAMERS.

Pipe size,	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Price, $	1 50	1 60	1 80	2 00	2 50	3 05	3 75	4 50	6 50	9 00	12 00	16 75	22 00

DRILLS.

Pipe size,	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Price, $	0 91	0 91	0 95	0 98	1 02	1 14	1 25	1 35	1 56				

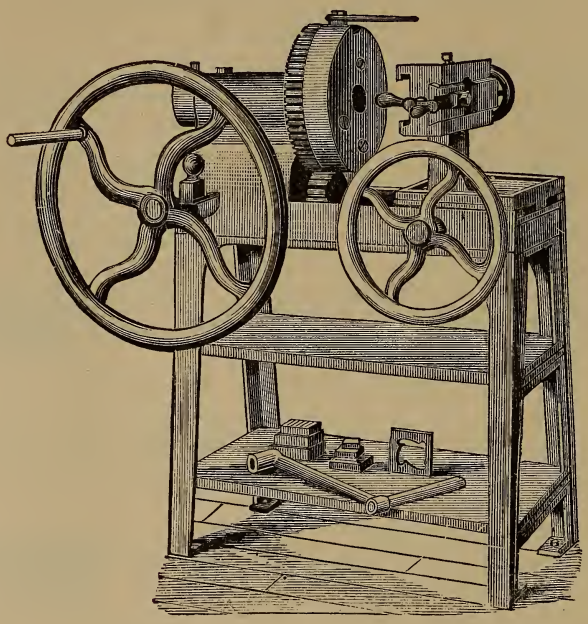
PIPE TONGS.

Extra Strong.

Pipe Size,	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Price, $	1 00	1 10	1 20	1 30	1 55	2 00	2 20	2 55	3 35	4 30	4 75	5 75	6 75

IMPROVED MACHINE,

For Cutting and Screwing Steam and Gas Pipes, by Hand or Power.



These machines have all been made of new patterns, embracing all the latest improvements: strengthening every weak point; cross-shafts thicker, journals longer; internal gear double the former strength, cutting and screwing head so constructed as to slide the dies to one end, instead of lifting it out when cutting pipe, thereby very much facilitating the cutting and screwing of all sizes of pipe. Price of No. 1, $95.00.

No. 2—HAND MACHINE,

Cutting and screwing pipe from one-quarter inch to two inches in diameter, with Universal Chuck, Fly Wheel and Dies, complete, ... $200 00

No. 2—POWER MACHINE,

Cutting and screwing pipe from one-quarter inch to two inches in diameter, with Universal Chuck, Cone Pulleys, Countershaft and Dies, complete, ... 220 00

No. 3—Screwing Machine, (Improved.)

For $\frac{3}{8}$ to 4 inch tubes, with Countershaft, Universal Chuck and Cutting-off and Screwing Head. Made to use Solid Dies, $\frac{3}{8}$ to 2 inch, and Cutter Dies $2\frac{1}{2}$ to 4 inch. Complete, $592 00

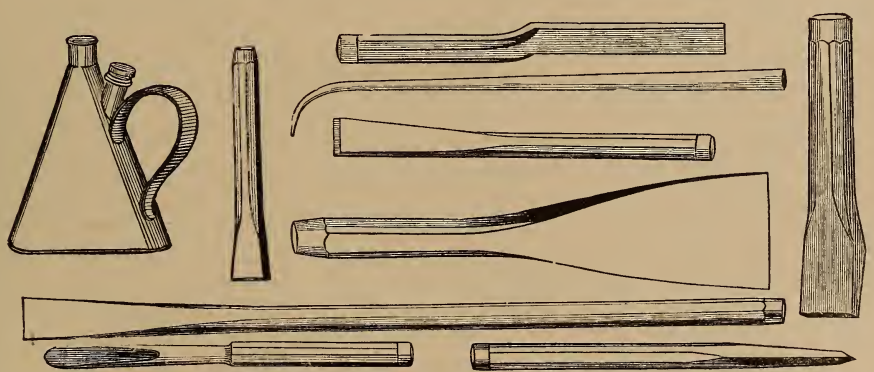
No. 4—Screwing Machine.

For 1 inch to 6 inch tube, with Countershaft, Universal Gripping Chuck, Universal Steady Rest in Cutting Head, Universal Rest for back of Spindle, Gate for Carrying Screwing Dies, etc., etc., made to use Solid Dies 1 to 2 inch, and Cutter Dies $2\frac{1}{2}$ to 6 inch. Complete, ... $1214 00

Gas and Steam Fitters' Augers.

Pipe Size, . . .	¼	⅜	½	¾	1	1¼	1½	2
Price, ... $	1 12	1 35	1 50	1 87	2 25	2 62	3 00	3 50

MISCELLANEOUS TOOLS.



Floor Chisel, 4 inches wide,	$3 00
Plaster " 2½ "	2 10
Cold "	70
Wall Drill,	70
Cape Chisel,	70
Calking Chisel,	75
Diamond Point,	70
Screw Driver,	
Set Tool,	50
Wood Chisel,	75
Long Wood Chisel,	1 15
Driving Chisel,	1 00
Blow-pipe,	1 00
Torch,	1 25
Chipping Hammer,	

MORSE PATENT STRAIGHT LIP INCREASE TWIST DRILL.

TURNED DRILLS.

Taper or Straight Shanks.

Patent Increase Twist and American Standard Drills.

No. of Sockets for Standard Taper.	Diameter of Drills.	Length in Inches.	Price Each.	No. of Socket for Morse Taper.
No. 1, $1.35.	1-4	6 1/8	$0 65	No. 1, $1.40.
	9-32	6 1/4	0 70	
	5-16	6 3/8	0 75	
	11-32	6 1/2	0 80	
	3-8	6 5/8	0 85	
	13-32	7	0 90	
	7-16	7 1/4	1 00	
	15-32	7 1/2	1 10	
	1-2	7 3/4	1 20	
No. 3 Socket, $2.10. No. 2, $1.65.	17-32	8	1 30	No. 2, $2.20.
	9-16	8 1/4	1 40	
	19-32	8 1/2	1 50	
	5-8	8 3/4	1 65	
	21-32	9	1 80	
	11-16	9 1/4	2 00	
	23-32	9 1/2	2 20	
	3-4	9 3/4	2 40	
	25-32	9 7/8	2 60	
	13-16	10	2 80	
	27-32	10 1/4	3 00	
	7-8	10 1/2	3 20	
	29-32	10 5/8	3 40	
	15-16	10 3/4	3 60	
	31-32	10 7/8	3 80	
No. 4 Socket, $2.65.	1	11	4 00	No. 3, $3.00.
	1 1-32	11 1/8	4 20	
	1 1-16	11 1/4	4 40	
	1 3-32	11 3/8	4 60	
	1 1-8	11 1/2	4 80	
	1 5-32	11 5/8	5 00	
	1 3-16	12	5 25	
	1 7-32	12 1/8	5 50	
	1 1-4	12 1/2	5 75	
	1 9-32	14 1/8	6 00	
	1 5-16	14 1/4	6 25	
	1 11-32	14 3/8	6 50	
	1 3-8	14 1/2	6 75	
	1 13-32	14 5/8	7 00	
	1 7-16	14 3/4	7 25	
	1 15-32	14 7/8	7 50	
	1 1-2	15	7 75	
No. 5 Socket, $4.40.	1 17-32	15 1/8	8 00	No. 4, $4.40.
	1 9-16	15 1/4	8 25	
	1 19-32	15 3/8	8 50	
	1 5-8	15 1/2	8 75	
	1 21-32	15 5/8	9 00	
	1 11-16	15 3/4	9 25	
	1 23-32	15 7/8	9 50	
	1 3-4	16	9 75	
	1 25-32	16 1/8	10 25	
	1 13-16	16 1/4	10 50	
	1 27-32	16 3/8	10 75	
	1 7-8	16 1/2	11 00	
	1 29-32	16 1/2	11 25	
	1 15-16	16 1/2	11 50	
	1 31-32	16 1/2	11 75	
	2	16 1/2	12 00	

The above we make by 64ths if ordered.

STRAIGHT SHANKS.

Diameter of Drills.	Length in Inches.	Price per Doz.	Price Each.
1-16	2 1/2	$1 20	11
5-64	2 5/8	1 30	12
3-32	2 3/4	1 40	13
7-64	2 7/8	1 60	14
1-8	3	1 80	16
9-64	3 1/8	2 00	18
5-32	3 1/4	2 20	20
11-64	3 3/8	2 45	22
3-16	3 1/2	2 70	24
13-64	3 5/8	3 00	26
7-32	3 3/4	3 30	29
15-64	3 7/8	3 60	32
1-4	4	3 95	35
17-64	4 1/8	4 30	38
9-32	4 1/4	4 60	40
19-64	4 3/8	4 95	43
5-16	4 1/2	5 30	46
21-64	4 5/8	5 70	50
11-32	4 3/4	6 20	54
23-64	4 7/8	6 70	58
3 8	5	7 20	62
25-64	5 1/8	7 70	66
13-32	5 1/4	8 10	70
27-64	5 3/8	8 45	74
7-16	5 1/2	8 80	78
29-64	5 5/8	9 20	82
15-32	5 3/4	9 65	86
31-64	5 7/8	10 10	90
1-2	6	10 55	94

The above comprises the Jobber's and Machinist's Sets. For very exact work, a gauge plainly marked should accompany an order.

STUBS' STEEL WIRE GAUGE.

Straight Shanks.

Numbers by Gauge.	Length in Inches.	Price per Doz.	Price Each.
1 to 5	4	$2 35	22
6 to 10	3 11-16	2 25	21
11 to 15	3 1-2	2 15	20
16 to 20	3 1-4	2 05	19
21 to 25	3 1-16	1 95	18
26 to 30	2 13-16	1 75	16
31 to 35	2 5-8	1 55	15
36 to 40	2 7-16	1 35	14
41 to 45	2 1-4	1 25	13
46 to 50	2 1-16	1 15	12
51 to 65	1 3-4	1 15	11

BIT-STOCK DRILLS.

Diameter of Drills.	Price per Dozen.	Price Each.
1-16	$1 75	$0 15
3-32	2 00	0 20
1-8	2 50	0 25
5-32	3 00	0 30
3-16	3 50	0 35
7-32	4 25	0 40
1-4	5 00	0 45
9-32	5 75	0 50
5-16	6 50	0 60
11-32	7 50	0 65
3-8	8 50	0 75
13-32	9 50	0 85
7-16	10 75	0 95
15-32	12 00	1 05
1-2	13 25	1 15

Price per set, 1-16 to 1/4 by 32d, 1/4 to 3/8 by 16th. Boxed, $3.10.

☞To prevent confusion in filling orders, parties will please state which Taper is desired.

☞Straight Shank Drills, Taper Lengths, at Taper Shank Prices.

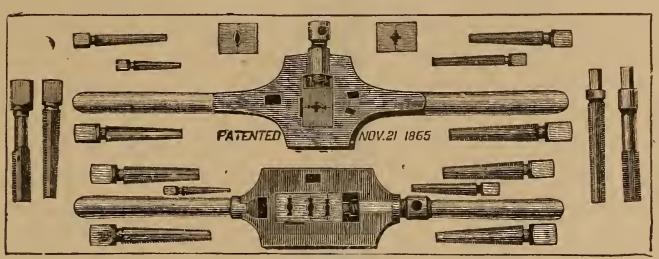
The Standard Taper corresponds with the Manhattan Taper.

Drills of any size or length, with Straight or Taper Shanks, made to order, and to fit any Socket desired.

The Patent Grinding Line is applied to Patent Increase Twist Drills only. Parties ordering will please state if they wish the Grinding Line applied.

Machinists' and Blacksmiths'

STOCKS AND DIES.



No.	Price.	Size.		Taps.	Sets Dies.
1,	$60.00	2 in. to 1 in.	Left and Right Hand.	8 and	4
2,	60.00	2 " $\frac{7}{8}$	..... "	8 "	4
3,	45.00	$1\frac{3}{4}$ " $\frac{7}{8}$	Left and "	8 "	4
4,	45.00	$1\frac{3}{4}$ " $\frac{3}{4}$	..... "	8 "	4
5,	35.00	$1\frac{1}{2}$ " $\frac{3}{4}$	Left and "	8 "	4
$5\frac{1}{2}$,	35.00	$1\frac{1}{2}$ " $\frac{3}{4}$	..... "	8 "	4
6,	20.00	$1\frac{1}{2}$ " 1	Left and "	4 "	2
7,	12.00	$1\frac{1}{4}$ " $\frac{7}{8}$	Left and $\frac{5}{8}$ in. "	6 "	3
9,	12.00	$1\frac{1}{4}$ " $\frac{1}{2}$	..... "	6 "	3
11,	10.00	$1\frac{1}{4}$ " $\frac{7}{8}$	Left and $\frac{5}{8}$ in. "	4 "	3
15,	10.00	$1\frac{1}{4}$ " $\frac{1}{2}$	..... "	5 "	3
17,	9.00	1 " $\frac{3}{4}$	Left and $\frac{1}{2}$ in. "	6 "	3
19,	9.00	1 " $\frac{3}{8}$	..... "	6 "	3
21,	6.00	1 " $\frac{3}{4}$	Left and $\frac{1}{2}$ in. "	4 "	3
23,	5.00	1 " $\frac{3}{8}$	..... "	3 "	3
25,	6.50	$\frac{3}{4}$ " $\frac{1}{2}$	Left and $\frac{3}{8}$ in. "	6 "	3
27,	6.50	$\frac{3}{4}$ " $\frac{3}{8}$	..... "	6 "	3
32,	5.00	$\frac{3}{4}$ " $\frac{3}{8}$	Left and "	4 "	4
33,	4.00	$\frac{3}{4}$ " $\frac{1}{2}$	Left and "	2 "	2
34,	4.50	$\frac{3}{4}$ " $\frac{5}{16}$	..... "	3 "	3
35,	4.00	$\frac{3}{4}$ " $\frac{3}{8}$	..... "	2 "	2
37,	4.25	$\frac{5}{8}$ " $\frac{3}{16}$	..... "	6 "	3
38,	4.50	$\frac{5}{8}$ " $\frac{7}{16}$	Left and $\frac{5}{16}$ in. "	6 "	3
41,	3.25	$\frac{1}{2}$ " $\frac{1}{8}$	..... "	6 "	3
42,	3 50	$\frac{1}{2}$ " $\frac{5}{16}$	Left and $\frac{3}{16}$ in. "	6 "	3
45,	5.50	$\frac{5}{8}$ " $\frac{7}{16}$	Left and $\frac{5}{16}$ in. "	6 "	3
47,	5.50	$\frac{5}{8}$ " $\frac{1}{4}$	..... "	6 "	3
49,	4.50	$\frac{1}{2}$ " $\frac{5}{16}$	Left and $\frac{1}{4}$ in. "	6 "	3
51,	4.50	$\frac{1}{2}$ " $\frac{3}{16}$	..... "	6 "	3
53,	2.75	$\frac{5}{16}$ " $\frac{1}{16}$	..... "	4 "	4

TAPS FOR ABOVE.

$\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, 40c.; $\frac{3}{8}$, 45c.; $\frac{7}{16}$, $\frac{1}{2}$, 50c.; $\frac{9}{16}$, $\frac{5}{8}$, 60c.; $\frac{3}{4}$, 75c.; $\frac{7}{8}$, $1.00; 1, $1.50 ea.

NEW YORK TAP AND DIE CO.

TAPER.

Volute Caps.

PLUG.

Bees' Patent.

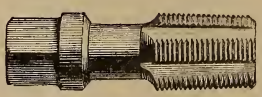
BOTTOMING.

MACHINISTS' HAND TAPS.

	Diameter.	No. Threads to Inch.	Price. Each.	Price per Set.
3 Taps to set—Taper, Plug, and Bottoming,	1-4	16, 18 & 20	$0 50	$1 50
3 " " "	5-16	16 & 18	0 55	1 65
3 " " "	3-8	14, 16 & 18	0 60	1 80
3 " " "	7-16	14 & 16	0 70	2 10
3 " " "	1-2	12, 13 & 14	0 80	2 40
3 " " "	9-16	12 & 14	0 90	2 70
3 " " "	5-8	10, 11 & 12	1 00	3 00
3 " " "	11-16	11 & 12	1 20	3 60
3 " " "	3-4	10, 11 & 12	1 40	4 20
3 " " "	13-16	10	1 60	4 80
3 " " "	7-8	9 & 10	1 80	5 40
3 " " "	15-16	9	2 00	6 00
3 " " "	1	8	2 25	6 75
3 " " "	1 1-8	7 & 8	2 50	7 50
3 " " "	1 1-4	7	3 00	9 00
3 " " "	1 3-8	6	3 50	10 50
3 " " "	1 1-2	6	4 00	12 00
3 " " "	1 5-8	5 & 5½	4 75	14 25
3 " " "	1 3-4	5	5 50	16 50
8 " " "	1 7-8	4½ & 5	6 50	19 50
3 " " "	2	4½	7 50	22 50

We make the above a 32d over size for Rough Iron.

PIPE TAPS AND REAMERS.



Price,	$1.12	1.25	1.50	1.87	2.50	3.12	3.75	4.62	6.25	12.00	18.50
Diameter,	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3 in.

NEW YORK TAP AND DIE CO'S

MACHINE OR NUT TAPS.

LONG SHANK.

Diameter.	No. Threads to Inch.	Price, each.
1–4	18 & 20	$0 75
5–16	16 & 18	0 90
3–8	14 & 16	1 05
7–16	12, 14 & 16	1 20
1–2	12, 13 & 14	1 40
9–16	12 & 14	1 60
5–8	10, 11 & 12	1 80
11–16	11 & 12	2 00
3–4	10 & 11	2 25
13–16	10	2 50
7–8	9 & 10	2 87
15–16	9	3 25
1	8	3 63
1 1–8	7 & 8	4 25
1 1–4	7	4 88
1 3–8	6	5 62
1 1–2	6	6 75
1 5–8	5 & 5½	8 00
1 3–4	5	9 25
1 7–8	4½ & 5	10 50
2	4½	12 00

Taps of irregular shape or length of shank made to order at special prices.

Hubs or Master Taps are 25 per cent. higher than Nut Taps. State in ordering whether for *solid* or *open* dies.

In ordering tools always state the thread wanted.

We can furnish the above a 32d or 64th over size.

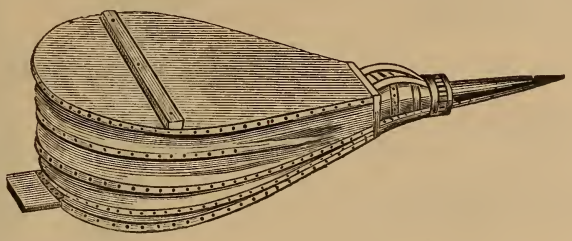
PRICE LIST OF FILES.

PER DOZEN, $10.00 TO THE POUND STERLING.

INCHES,	4	4½	5	5½	6	7	8	9	10	11	12	13	14	15	16
BASTARD.															
Flat Square, Round and Half Round,	$2 38	$2 62	$2 88	$3 12	$3 50	$4 25	$5 25	$6 00	$7 50	$9 00	$10 75	$12 50	$15 00	$18 00	$21 50
Hand, Three Square and Warding,	2 62	2 88	3 12	3 50	4 25	5 25	6 00	7 50	9 00	10 75	12 50	15 00	18 00	21 50	25 00
SECOND CUT.															
Flat, Square, Round and Half Round,	2 75	3 00	3 38	3 75	4 12	4 88	6 00	6 75	8 50	10 00	12 00	13 50	16 50	19 50	23 50
Hand, Three Square and Warding,	2 00	3 38	3 75	4 12	4 88	6 00	6 75	8 50	10 00	12 00	13 50	16 50	19 50	23 50	27 50
SMOOTH.															
Flat, Square, Round and Half Round,	3 38	3 75	4 12	4 50	4 75	5 75	6 75	7 75	9 50	11 50	13 25	15 00	18 00	21 00	26 00
Hand, Three Square and Warding,	3 75	4 12	4 50	4 75	5 75	6 75	7 75	9 50	11 50	13 25	15 00	18 00	21 00	26 00	31 50
MILL SAW.															
Fine Single Cut,	2 38	2 62	2 88	3 12	3 50	4 25	5 25	6 00	7 50	9 00	10 75	12 50	15 00	18 00	21 50
Second Cut,	2 75	3 00	3 38	3 75	4 12	4 88	6 00	6 75	8 50	10 00	12 00	13 50	16 50	19 50	23 50
RASPS.															
HORSE,									7 50	9 00	10 75	12 50	15 00	18 00	21 50
" Beveled Edge,									8 50	10 00	11 75	13 50	16 00	19 00	22 50
" Tanged,									10 75	12 50	15 00	18 00	21 50	25 00	30 00
Flat and Half Round,					3 50	4 25	5 25	6 00	7 50	9 00	10 75	12 50	15 00	18 00	21 50
WOOD and SHOE,					4 75	5 75	6 75	7 5	9 50	11 50	13 25	15 00	18 00	21 00	26 00
CABINET Rasps and Files,															

HAND-SAW and PIT-SAW FILES.	INCHES,	3	3½	4	4½	5	5½	6	6½	7	7½	8	9	10	11	12
	Tapers, 2d Cut Single,	2 00	2 00	2 25	2 50	2 75	3 25	3 75	4 25	4 75	5 25	6 00	7 75	9 75	12 00	14 50
	" " Double, Cut to Point,	2 38	2 38	2 62	3 00	3 25	3 75	4 25	4 75	5 50	6 25	6 75	8 50	10 50	13 00	15 50
	Pit-Saw, 2d Cut Single,	2 38	2 38	2 62	2 88	3 25	3 75	4 25	4 75	5 25	6 00	6 75	8 00	10 00	12 50	15 00

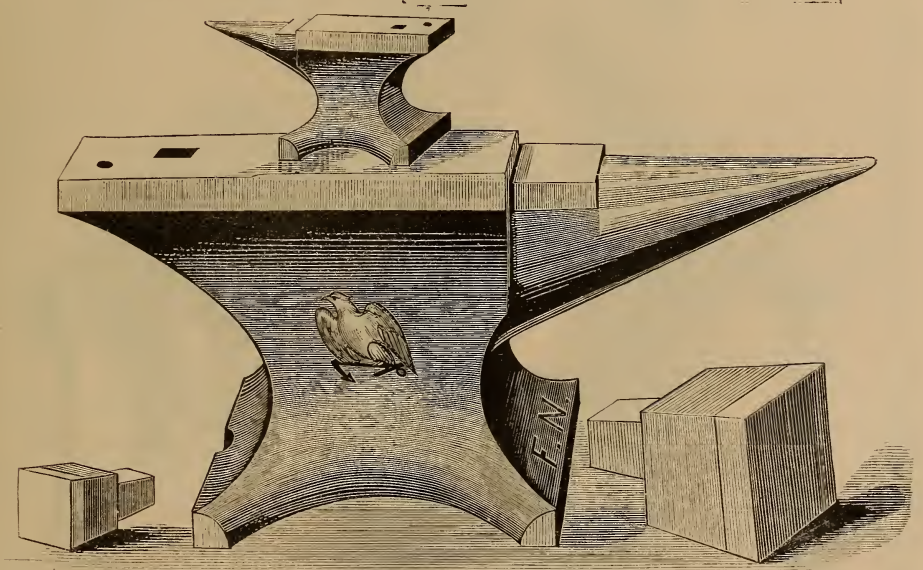
BELLOWS.



BLACKSMITH'S BELLOWS.

24 inch,	$10 00	36 inch,	$19 00
26 "	11 00	38 "	22 00
28 "	12 00	40 "	24 00
30 "	13 00	42 "	27 00
32 "	15 00	44 "	38 00
34 "	17 00		

THE EAGLE ANVIL WORKS.



Anvils weighing 100 lbs. to 600 lbs., 13 cents per lb. Smaller Anvils, ("Minims.")

	No 0	1	2	3	4	5
Weighing about	10 lbs.	15 lbs.	20 lbs.	30 lbs.	40 lbs.	50 lbs.
	$4 00	$5 00	$6 00	$6 50	$7 00	$8 00

	No. 6	7	8	9
Weighing about	60 lbs.	70 lbs.	80 lbs.	90 lbs.
	$9 00	$10 00	$11 00	$11 50

MOUSE HOLE AND PETER WRIGHT'S ANVILS.

100 to 150 lbs. each, . . . } Price,
200 to 250 lbs. " . . . }

300 to 400 lbs. each, for heavy Railroad use, ... } Price,

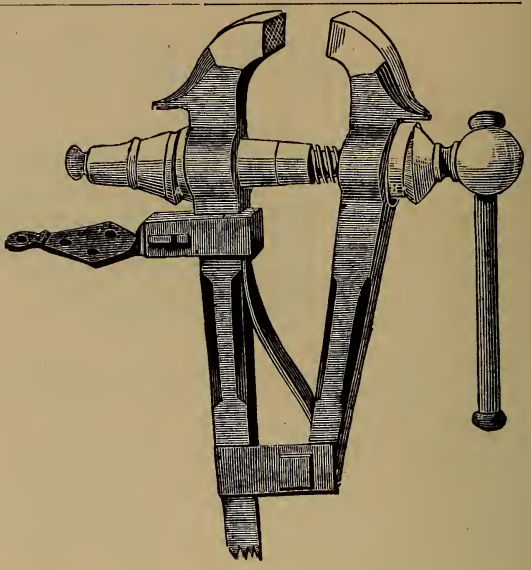
VISES.

PATENT

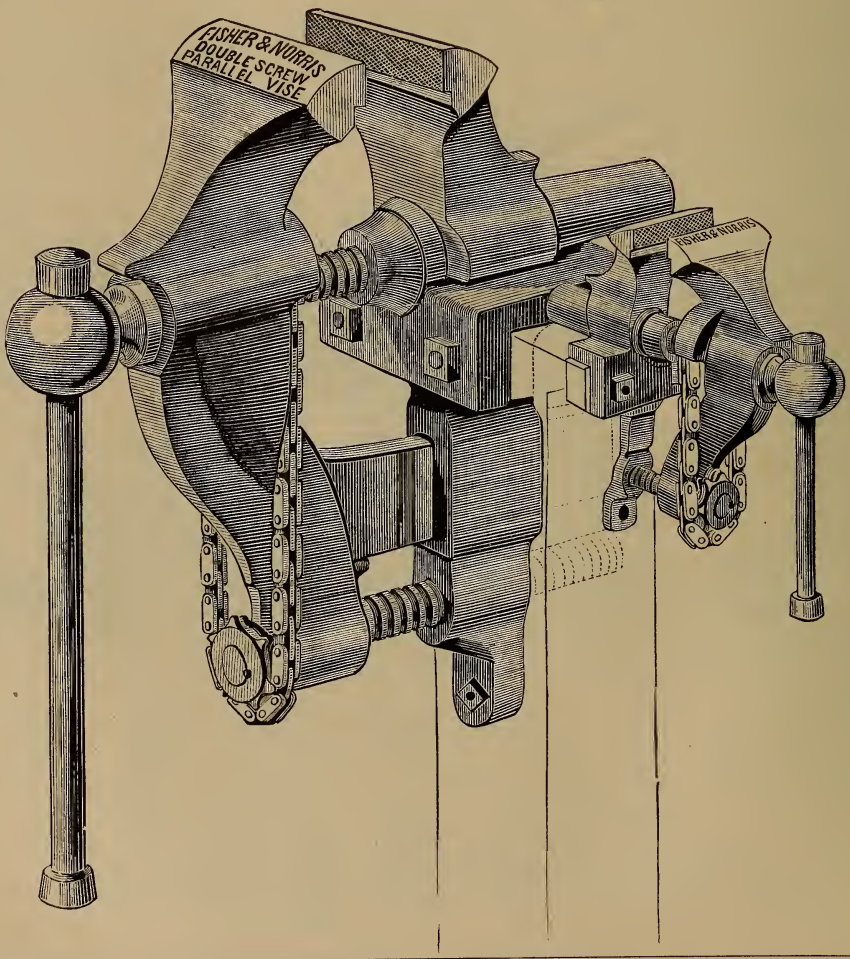
SOLID BOX VISE.

WARRANTED.

All Sizes—English and American.



THE DOUBLE SCREW PARALLEL VISE.



FOR DESCRIPTION AND PRICES, SEE FOLLOWING PAGE.

The Double Screw Parallel Vise.

More than twenty-five years' use of this Vise by Machinists, Tool Makers, Locomotive Shops, &c., has established its superiority over every other.

It is the only one which has all the strength and "grip" of the ordinary English Vise; and at the same time with the jaws *parallel* at every point of opening.

In all other "Parallel" Vises having but one screw, *less than one-third* of the power applied is effective on the work itself; besides, in those vises the large waste of power on the slide from *friction* and the *tendency to "jam,"* of the lower end of the jaw, if screwed up very hard, renders them unfit for heavy work.

In this Vise the jaws are kept *always parallel* by the lower screw moving in or out exactly with the upper lever screw, by means of the chain connecting both; also, by their relative position, *two-thirds* of the power at the lever screw is received by any piece held between the jaws—thus enabling the heaviest work ever required of a vise to be done with this.

The Screws are forged of the best refined iron, and work in *solid cut thread* boxes. The jaws are faced with the *best* Tool Steel, welded on, file cut, and properly tempered for wear.

The Chain is very carefully made of case hardened links and rivets, and acting only to *regulate* the position of the lower screws from different points of opening—has *no direct strain* of the work upon it; it is therefore as durable as the other parts.

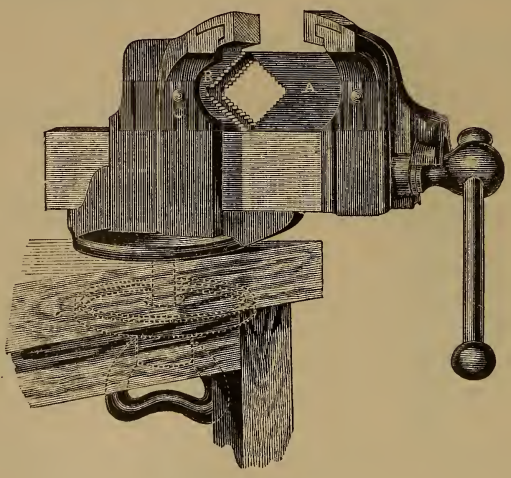
Only the strongest material is used in this manufacture, and from actual experiment on the six inch jaw vise, which has screws of $1\frac{3}{8}$ inch diameter and lever 19 inches long, it has been found that applied at the lever screw it required to break either of the jaws, *eleven and one half tons*, thus exhibiting a maximum strength far above *any* other vise of like size.

The seven inch Vise has a lever two feet in length—screw $1\frac{3}{4}$ inch diameter, and is without exception the most powerful vise ever used.

PRICES.

No. 1,	width of jaw	3	inches,	and	weighing	about	12	lbs.,	. .	$ 7 00
" 2,	"	"	$4\frac{1}{2}$	"	"	"	50	"	. .	15 00
" 3,	"	"	5	"	"	"	80	"	. .	20 00
" 4,	"	"	6	"	"	"	125	"	. .	26 00
" 5,	"	"	7	"	"	"	160	"	. .	30 00

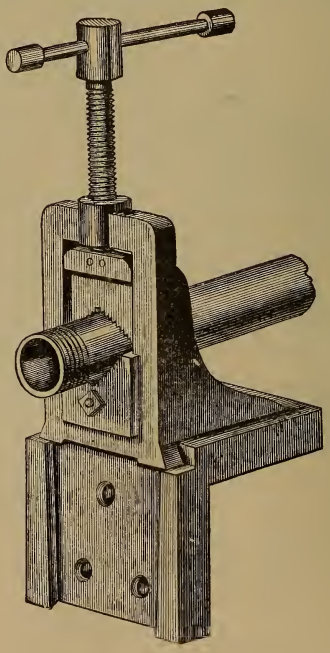
Improved Combination Pipe Vise.



PRICES.

No. 1—takes 2 inch pipe and under, ...	$16 00
No. 2— " 3 " "	20 00

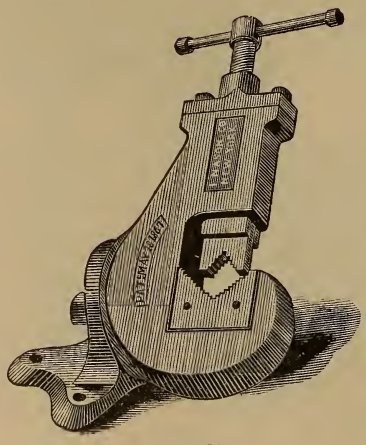
Pipe Vise, with Angle Plate.



No. 1—takes ⅛ to 2 inch pipe, . .	$15 00
No. 2— " ¼ " 3 " . .	20 00

No. 1 Pipe Vise on Stand $18 00

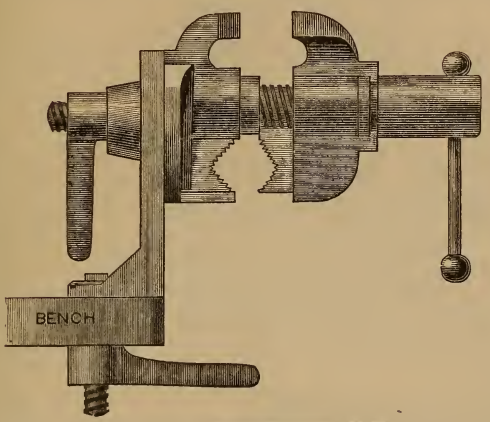
Nason's Patent Pipe Vise.



PRICES.

No. 1, to hold pipe from ⅛ to 1¼ in. diam., .	$15 00
No. 2, " " ⅛ " 2 " .	18 00
No. 3, " " ¼ " 3 "	30 00

PEACE'S PATENT UNIVERSAL VISE.



This Vise will grip all shapes, and is suitable for steam and gas fitters, steamboats, railway shops, machinists, blacksmiths, and mechanics in general. It has two Heads—one to grip pipe from ⅛ to 2 inches, bolts, &c., and another to grip all ordinary shapes, as a common vise. The Head revolves to any angle, vertical or horizontal, and opens and shuts parallel.

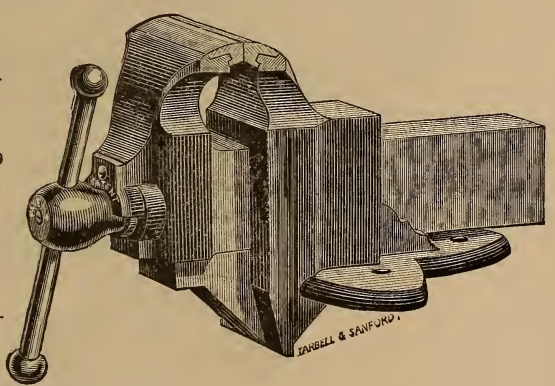
Price, ... $18.00

Parker's Patent Square Slide Parallel Vise.

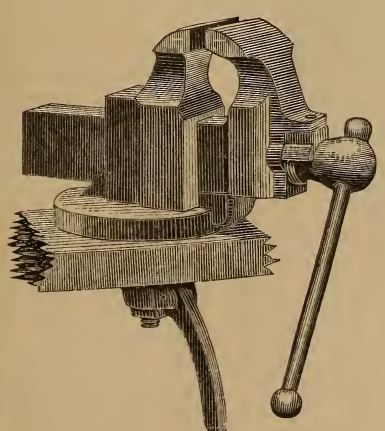
No....	000	1	2	3	4	5
Length of Jaw	3¼	3⅝	4¼	4¾	5⅜	6⅛
Price.	$6 50	$7 50	$10 00	$13 00	$18 00	$26 00

SWIVEL.

No	1	2	3	4
Price.....	$8 00	$10 00	$12 00	$16 00



ROUND JAW.



Howard Swivel Bench Vise.

SWIVEL.

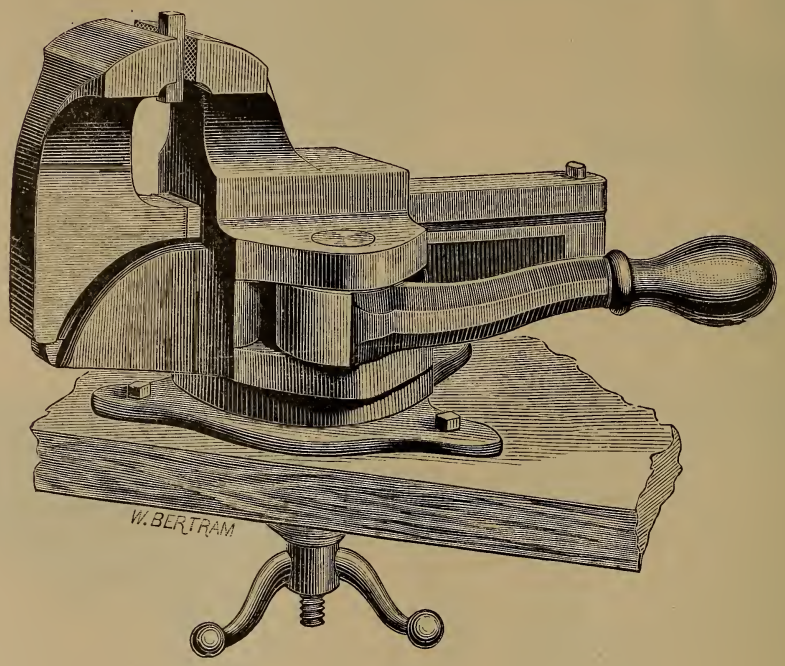
No. 00—	Length of Jaw	2	inches,	weight	7½	lbs.,	.	$4 00
" 0—	"	" 3	"	"	29	"	.	6 25
" 1—	"	" 3½	"	"	38½	"	.	8 00
" 2—	"	" 4	"	"	48	"	.	10 00
" 3—	"	" 4½	"	"	61	"	.	13 25
" 4—	"	" 5	"	"	—	"	.	16 50
" 5—	"	" 6	"	"	129	"	.	26 00
" 6—	"	" 7	"	"	188	"	.	36 00

STEPHENS'

PATENT PARALLEL VISE,

WITH

Swivel, Taper, Table, and Pipe Attachments.



SMOOTH OR ROUGH JAWS.

Width of Jaw.	Opens.	Weight.	Price.	Swivel.
2 inches.	2 inches.	2 lbs.	$4 50	$ 75
2¾ "	2¾ "	12 "	6 00	1 00
3½ "	5 "	35 "	10 00	1 50
4½ "	6½ "	65 "	14 50	2 00
5½ "	9½ "	125 "	26 00	4 00
6½ "	11 "	160 "	35 00	6 00

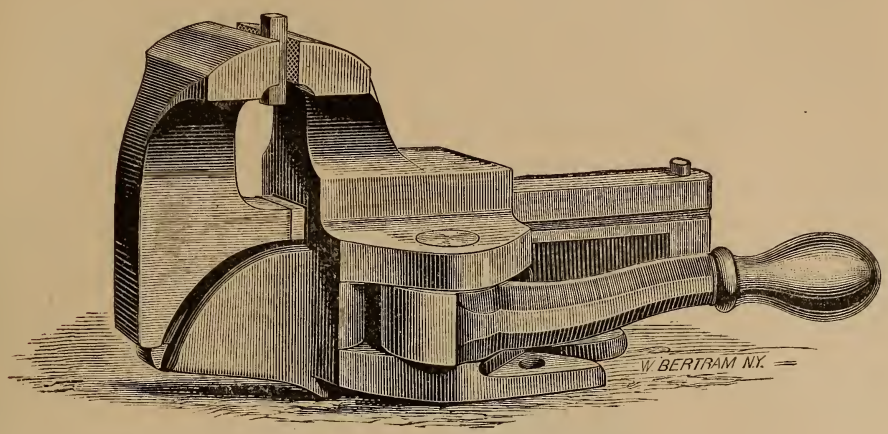
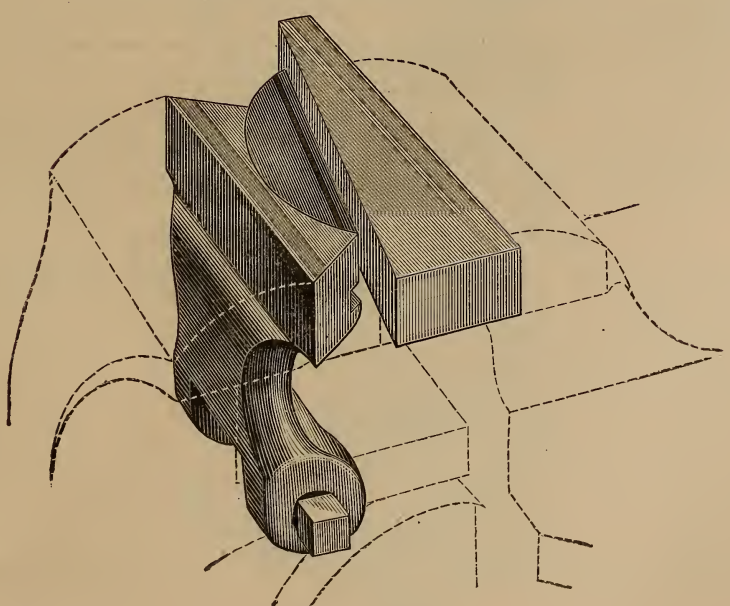


TABLE ATTACHMENTS.

2 in. Flat.	2 in. Swivel.	2¾ in. Flat.	2¾ in. Swivel.
$1.00	$1.50	$1.75	$2.50

TAPER ATTACHMENT.



TAPER ATTACHMENTS.

2 in.	2¾ in.	3½ in.	4½ in.	5½ in.	6½ in.
$2.00	$2.75	$4.00	$5.50	$7.50	$10.00

RAILWAY CAR SPRINGS.

BUNTIN'S PATENT IRON CAR SEAT FRAME.

We are prepared to furnish at short notice, the celebrated BUNTIN'S PATENT IRON CAR SEAT FRAME, at the following prices:

Castings for each Reversible Seat	$4.00
Right or Left Hand Corner Seat	2.50
Malleable Striker Arm with Rivet and Burr, each	40
Nickel Plated Arm Cap	2.00
Nickel Plated Seat Locks, per doz.	6.00
Nickel Plated Joint Bolts each	12
Plain Joint Bolts each	7
Drilling for Locks	50
Drilling without Locks	30

DAVIS'S COMBINED SPIRAL SPRING — BESSEMER STEEL.

4 Bolster Springs, for 10-ton freight	$40.00
6 Bolster Springs, for 10-ton freight	44.00
Bolster Springs, for 12½-ton freight	48.00
Bolster Springs, for 15-ton freight	56.00
8 Journal Springs, for 10-ton freight	42.00
4 Bolster Springs, for passenger cars	80.00
8 Equalising Bar Springs, for passenger cars	80.00
4 Tender Springs	80.00
Draw Springs for coal cars, each	3.50
4 Bolster Springs, for caboose cars	50.00
4 Journal Springs, for 6 and 7-ton cars	22.00
4 Journal Springs, for 5-ton cars	20.00

This class of Springs is made from the celebrated Bessemer Steel, manufactured by the Cleveland Rolling Mill, and have rendered satisfaction wherever used, particularly in cases where a light Spring is required with full capacity and extreme motion. We can highly recommend these.

WOOL-PACKED SPIRAL SPRING.

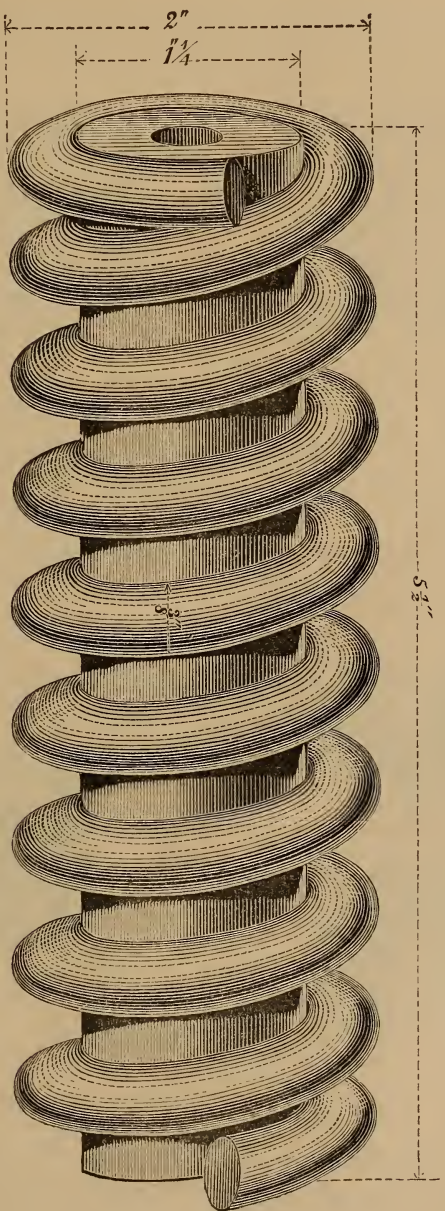
The following prices are for Springs as specified. For any Spring larger a proportionate charge per Coil will be added.

4 Bolster Springs, for 10-ton freight	$40.00
6 Bolster Springs, for 10-ton freight	44.00
Bolster Springs, for 12½-ton freight	50.00
Bolster Springs, for 15-ton freight	58.00
8 Journal Springs, for 10-ton freight	42.00
4 Bolster Springs, for passenger cars	85.00
8 Equalising Bar Springs, for passenger cars	85.00
4 Tender Springs	85.00
4 Bolster Springs, for caboose cars	52.50
4 Journal Springs, for 6 and 7-ton cars	22.00
4 Journal Springs, for 5-ton cars	20.00

It is our intention at all times to keep a full supply on hand of all the leading Springs made by us, so as to be able to fill orders with promptness and dispatch.

Our facilities are such, that orders for any new style, or class of Springs, can be furnished at very short notice.

Rubber Centre Spiral Springs.



Patented
Nov. 29, 1853.

Extended,
Nov. 12, 1867.

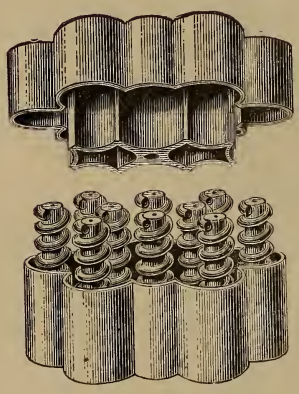
Reissued, December 13, 1870.

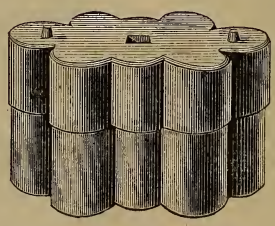
CHARLES REUTER. J. D. MALLORY.

The Rubber Centre Spiral Spring,

Illustrated on the preceding page, combines the two best known materials—Steel and Rubber. Rubber as a filling is not liable to the objections urged against wool or other material. The hole through the centre leaves it free to expand and contract without abrasion. It has a uniform action, is not affected by moisture, and is never eaten by moths. These springs are furnished separate from the cases, at the following prices:

8	Coils,	55	cents each.
9	"	65	" "
10	"	70	" "
11	"	75	" "
12	"	85	" "
13	"	90	" "
14	"	1.00	" "

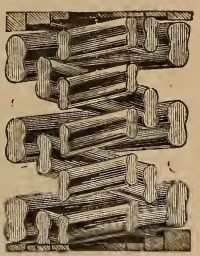




The above cuts represent an open and closed case, containing ten 10-coil spirals in position, and forming a group or bearing spring. The action of the spring, alternately admitting and expelling a portion of the air within the case, keeps the inside entirely clean and free from dir

The Dinsmore Spiral Spring.

PATENTED MARCH 11, 1862.



This spring consists of three or more spiral coils made of fluted steel, placed one within the other, and forming a nest. These coils do not come in contact, and are consequently free from friction, while their sustaining power is materially increased, and their action easy, elastic and uniform.

PRICE LIST.

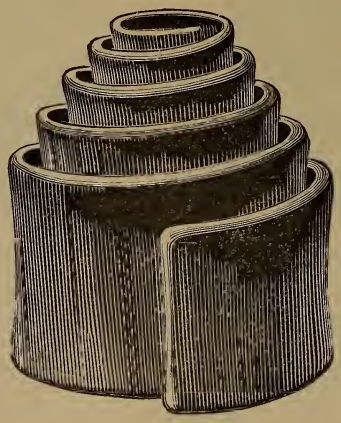
Diameter.	Height.	No. of Spirals in nest.	Price per Inch, in Height.
5 inches,	Any height that may be required.	3	$0 75
5¼ "		3	80
5½ "		3	85
6 "		4	1 00
6½ "		4	1 20
6¾ "		4	1 30
6¾ "		3	1 50
7 "		4	1 60
7⅞ "		4	1 70
8 "		4	2 00
8 "		5	2 00

Whenever Springs are wanted with a greater or less number of Spirals grouped in a Nest, than as above specified, the order will be regarded as a special one, and the price subject to special contract.

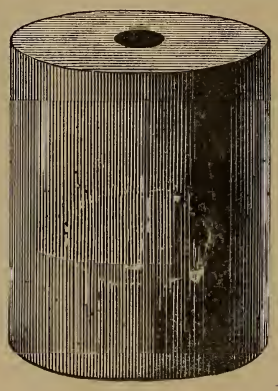
ORIGINAL

Standard Volute Buffer Spring.

PRICE CTS. PER POUND.



INDIA RUBBER.

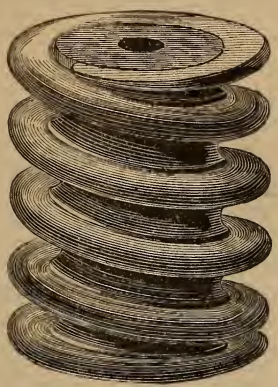


We claim that the Rubber Springs of our manufacture are *superior* to any in the market; and in support of our claim we need only mention the fact, that of the vast quantities of warranted Rubber Springs we have sold, not a single one has been returned, nor have we been called upon to replace a defective one.

Prices subject to the condition of the market.

Orders should, in all cases, specify diameter, height, and size of hole.

Large Rubber Centre Spiral Spring.



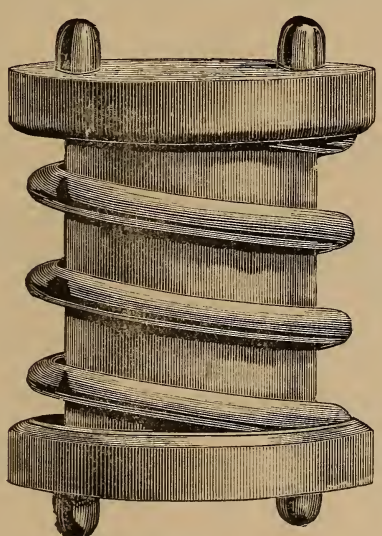
This Spring is very superior for freight. It is made of a Steel Spiral Coil, with India Rubber Filling, and has *more motion* than any other Steel Coiled Spring in use.

Size, 4½x6 inches, to be used eight or ten to a car without castings.

PRICE $5.00.

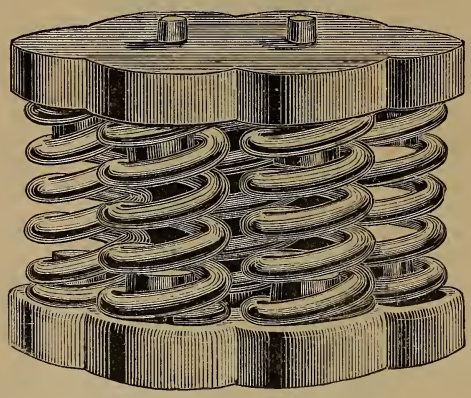
Springs for City Cars, 3x7½, price $3.00.

Enlarged Rubber Centre Spiral Spring.



This Spring is used for bearing purposes in passenger or freight car trucks, and can be adjusted to equalizing-bar or bolster. It consists of a large central column of rubber, surrounded by a powerful spiral coil of round steel, both kept in place by seat castings, and combining in its action all the strength and elasticity of the two materials.

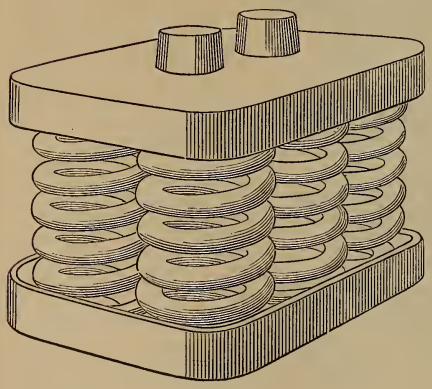
SPIRAL CLUSTER SPRING.



This Spring consists of heavy coils of Round Steel without Rubber, seated in top and bottom castings. It is strong and durable, and specially adapted to freight work. Any desired number of Spirals can be grouped.

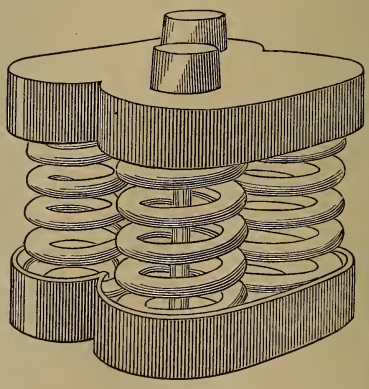
Price of 7 Spiral groups, $34 per set of four groups to a car.

OPEN CASE.



This Spring is composed of 6 coils of 9-16 inch steel, height of Spring 6½ inches, width 8 inches, 11½ inches long, capacity 10 tons. 4 Springs to the car. Price, $30 per set.

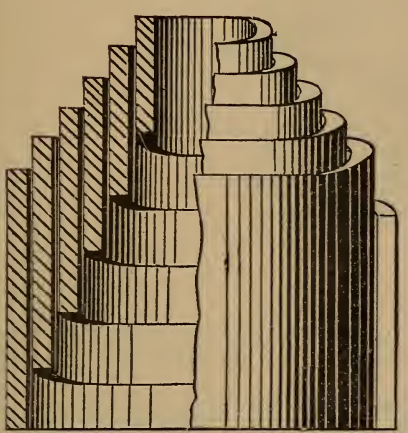
OPEN CASE.



This Spring is composed of 4 coils of ½ inch steel, 6½ inches high, 8½ in. long, 8 inches wide, capacity 8 tons. 4 Springs to the car. Price $20 per set.

Schoen's Patent Equable Volute Buffer Springs.

TO MANAGERS OF RAILROADS AND CAR BUILDERS.



We invite your attention to Schoen's Equable Volute Buffer Spring for Passenger and Freight Cars. In the ordinary Volute Spring, constructed of a steel plate of uniform width and thickness, or tapered, or flattened off only at the ends, the elastic action while under pressure is confined almost entirely to the middle coils and those towards the base; these coils, having the longer leverage, must necessarily act first, and the smaller coils from their stiffness and short leverage, afterwards. The Elastic action being confined to so small a portion of the Spring, the fibers of the steel become fractured and finally break.

By reference to the cut annexed, it will be seen that this defect is remedied by the gradual narrowing of the plate of which the Spring is constructed; the coils toward the small end are thereby made less rigid, and the elastic action is extended equally throughout all the coils of which the Spring is constructed, thereby almost entirely obviating the liability of fracturing the fibers of the steel. The price will always be as low as the ordinary style of Volute Spring.

PRICE LIST.

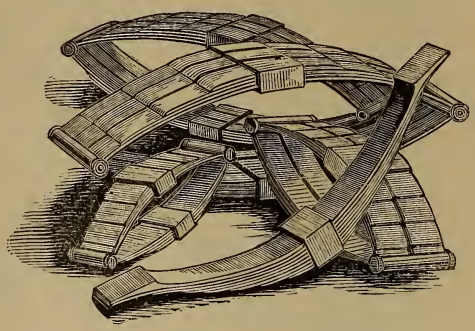
Diameter of Hole.	Diameter of Spring.	Height.	Price.
From 1 to 2	$5\frac{1}{2}$	5 to $5\frac{1}{4}$	$2 24
" "	5	$5\frac{3}{4}$ to 6	2 72
" "	$5\frac{1}{2}$	$5\frac{3}{4}$ to $6\frac{1}{4}$	2 88
" "	$5\frac{1}{2}$	$6\frac{1}{2}$ to $6\frac{3}{4}$	3 36
" "	6	6 to $6\frac{1}{4}$	3 52
" "	$5\frac{1}{4}$	7 to $7\frac{1}{4}$	3 68
" "	$6\frac{1}{2}$	$5\frac{3}{4}$ to $6\frac{3}{4}$	3 84
" "	5	$7\frac{1}{2}$ to 8	3 92
" "	$5\frac{1}{4}$	$7\frac{1}{2}$ to 8	4 15
" "	$5\frac{1}{2}$	$7\frac{1}{2}$ to 8	4 32
" "	$5\frac{3}{4}$	8 to $8\frac{1}{2}$	4 80

All orders should give height, diameter and size of hole. Sizes varying from the above list will be charged at proportionate rates.

CHARLES REUTER. J. D. MALLORY.

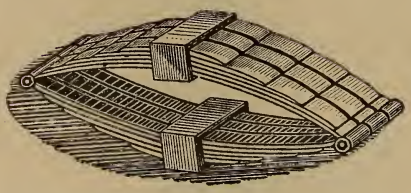
Elliptic Cast Steel Springs.

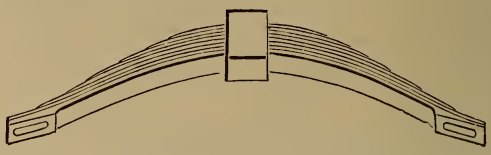
FOR RAILWAY CARS AND LOCOMOTIVES.



These Springs are light, extra tempered, and made of the best cast steel. Our stock embraces those of American manufacture, and also the imported French elliptics.

CAST STEEL SPRINGS.





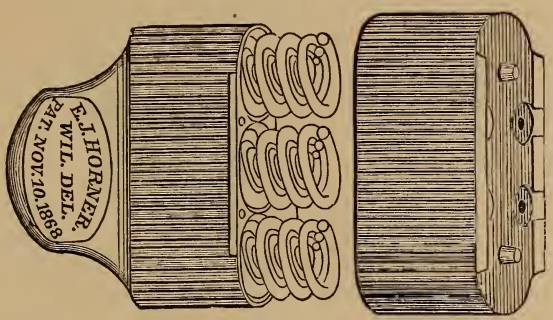
We beg leave to call your attention to the Cast Steel Springs which we are manufacturing for Locomotives and Railroad Cars from Cast Steel, which we have made to order expressly for the purpose. Owing to the quality of the steel and our mode of tempering, we believe these Springs to be superior to any made for elasticity, strength and durability. They are much lighter than Springs made of Swede Iron Steel, while their durability is much greater. Every Spring is *tested* to over *double* its carrying weight before it is sent from the works.

In ordering, please give the "*height* of Spring over all when loaded, and the *weight* each Spring is to sustain."

PRICE PER LB.,

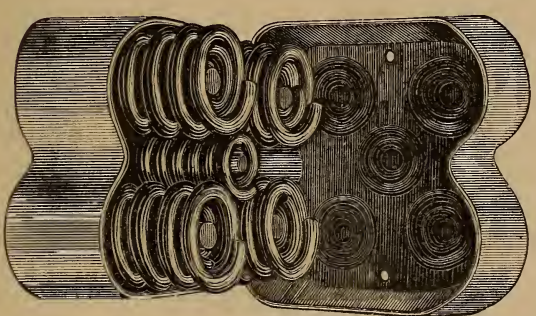
Equalizing Bar Spring.

11 inches high, Bar 2¼ and 2½ inches. Capacity to set of 8 Springs, 52,000 lbs.



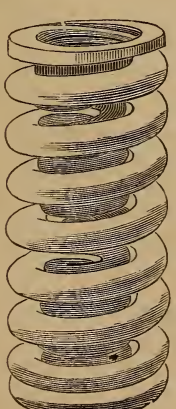
Top 4½ inches. Price per set of 8 Springs, $75.00.

Bolster Springs for Freight Cars.



CAPACITY 12 to 14 TONS.

Price per set of 4, $35.00.



SPIRAL BUFFER.

Made of two coils of ½ inch, and ⅝ and ¾ steel, the inside one ½ inch shorter than the outside, making the best Buffer Spring in use.

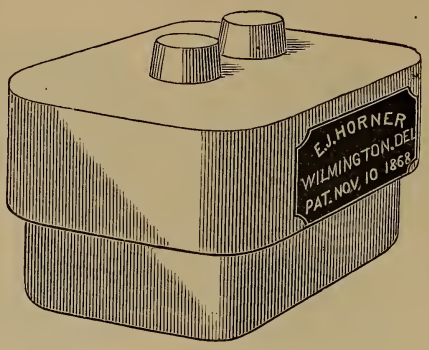
Length 7½ and 8½ inches, width 3½ and 5 inches.

Price, each, $2.50 and $3.50.

All sizes of VOLUTE SPRINGS constantly on hand and made to order. Price, per lb.

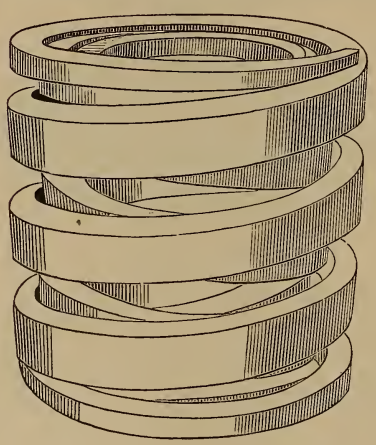
Bolster Springs for Passenger Cars.

CAPACITY 24 TONS.



Height of Spring, 6½ ; Length, 11½ ; Width, 8½ inches. 4 Springs to the Car.
Price per set, $70.00.

HORNER'S SPIRAL SPRINGS.



Inches Diam.	Inches Long.	Spirals in Nest	Price.	Inches Diam.	Inches Long.	Spirals in Nest.	Price.
5	4	3	$2 80	6¾	6	4	$7 62
5	5	3	3 40	6¾	7	4	8 75
5	6	3	4 00	6¾	8	4	10 90
5	7	3	4 60	6¾	9	4	11 26
5	8	3	5 20	6¾	10	4	12 60
5½	4	3	3 20	8	6	3	8 54
5½	5	3	3 90	8	7	3	9 78
5½	6	3	4 62	8	8	3	11 28
5½	7	3	5 30	8	9	3	12 70
5½	8	3	6 00	8	10	3	13 95
6	4	3	4 00	8	6	4	10 00
6	5	3	4 85	8	7	4	11 38
6	6	3	5 70	8	8	4	13 15
6	7	3	6 55	8	9	4	14 86
6	8	3	7 45	8	10	4	16 55
6¾	6	3	6 62	8	6	5	11 00
6¾	7	3	7 63	8	7	5	12 50
6¾	8	3	8 65	8	8	5	14 40
6¾	9	3	9 76	8	9	5	16 36
6¾	10	3	10 85	8	10	5	18 30

The spirals being of different lengths, making one of the easiest and best carrying or riding springs that can be used under a car.

All sizes made to order if not on hand.

PRICE LIST
OF
RAILWAY CAR SUPPLIES.

Nos.	BASKET RACKS.		Brass Ormolu.	Silver Plated.
1	Howard's Basket Racks, 24 inches long, Painted Wire Netting and Rods, Brass Brackets, Vine pattern..... each		$3 00	
3	" " 24 inches long, Painted Wire Netting and Rods, Brass Brackets, "H" pattern..... each		3 50	
4	" " 24 inches long, Painted Wire Netting and Rods, Brass Brackets, new pattern..... each		3 50	
5	" " 24 inches long, Painted Wire Netting and Rods, Brass Brackets, new pattern..... each		3 00	
6	" " 24 inches long, Painted Wire Netting and Rods, Brass Brackets, new pattern..... each		3 50	
5	" " 24 inches long, Bronzed Wire Netting and Rods, Brass Brackets.....each		3 00	
6	" " 24 inches long, Bronzed Wire Netting and Rods, Brass Brackets.....each		3 50	
	Extra lengths over 24 inches long, additional.....per foot		50	
5	" " 24 inches long, Brass Wire Netting, Brass Rods, Brackets, Acorn Nuts and Screws.....each		5 00	$6 50
6	" " 24 inches long, Brass Wire Netting, Brass Rods, Brackets, Acorn Nuts and Screws.....each		5 50	7 00
7	" " 24 inches long, Brass Wire Netting, Brass Rods, Brackets, Acorn Nuts and Screws..... each		5 00	6 50
	Extra lengths over 24 inches long, additional ..... per foot		1 50	2 00
	Howard's Basket Rack End Brackets only, Nos. 1, 5 and 7, each		1 00	
	" " " " Nos. 3, 4 and 6, each		1 25	
	" " Center Brackets only, for long Baskets requiring a center support.....each		75	
	" Patent "Hat Attachment," for suspending the Hat under the Basket, applied to No. 6 Basket only, each		50	
8	Brass Basket Rack, Burnished Gilt Bracket, with Lions' Heads, 24 inches long.....each		6 50	
9	" " Burnished Gilt Bracket, light pattern, 24 inches long.....each		6 00	
	BELL AND HAT CORD.			
	Howard's Bell Cord, fancy braided.....per foot	$0 05		
	" " brass wire covered..... "	07		
	" " solid leather ..... "	07		
	" " Italian hemp .....per lb.	42		
	" Hat Cord, fancy braided.....per foot	04		
	" Bell Cord Coupling Hooks .....per doz.		1 25	1 50
	" " Connectors, for uniting cord if broken.. "		1 25	1 50
	" " Screw Hooks, for outside of car.... "		50	75
	" Hat Cord Hangers..... "		1 00	1 50
	" " End Fasteners..... "		2 00	3 00

PRICE LIST OF RAILWAY CAR SUPPLIES—*Continued.*

Nos.	BELL CORD BUSHINGS.	Japanned.	Brass Ormolu.	Silver Plated.
1	Howard's Bell Cord Bushings, plain, ½ inch hole, burnished, per doz.	$0 50	$2 00	$3 00
3	" " " " 1 " burnished, per doz.		2 00	3 00
5	" " " " 1 " burnished, per doz.	50	4 50	6 00
4	" " " with Sheave, 1 in. hole, "	2 50	4 50	6 00
6	" " " " and Bonnet, "	3 00		
7	" " " " 1 inch hole, extra heavy, burnished.....per doz.		5 00	6 50
8	" " " with Sheave, ½ inch hole, extra heavy, burnished.... per doz.		4 50	6 00
	BELL CORD HANGERS.			
3	Howard's Bell Cord Hangers, 1½ inch long, plain.....per doz.	1 00	2 50	3 00
5	" " " 1½ " " round pattern, burnished .....per doz.		3 00	4 00
2	" " " 1 inch long, with Sheave, burnished..... .....per doz.		4 00	6 00
4	" " " 1 inch long, with Sheave, Horizontal Roller, burnished, per doz.		4 00	6 00
6	" " " 2 in. long, with Sheave, heavy, burnished.....per doz.	3 00	5 00	7 00
6½	" " " 2 in. long, with Sheave, heavy, burnished, 2 Screw Holes and Stud.....per doz.		5 50	7 50
7	" " " 1½ inch long, with Sheave, Oval Base, 2 Screw Holes...per doz.		4 00	6 00
8	" " " 1½ in. long, with Sheave, Round Base, 2 Screw Holes . per doz.		4 00	6 00
9	" " " 1 inch long, with Sheave, Side Roller, burnished.....per doz.		4 00	6 00
10	" " " 3 in. long, with Sheave, fancy pattern, burnished.....per doz.		8 00	12 00
12	" " " 6½ in. long, with Sheave, fancy pattern, heavy burnished, per doz.		18 00	24 00
	Other lengths, fancy patterns, made to order.			
	Howard's Bell Cord Hangers, Fluted Tubing, with Arms, with Sheave, for Monitor Decks, each		3 50	
	" " " fancy Bracket pattern, for Monitor Decks.....each		3 00	
	" " " rich Bracket pattern, burnished, for Monitor Decks. ..... each			5 00
1	" " Strap Hangers, 24 in., fancy Leather, 1 in. Sheaves to sew in, for Monitor Decks.....each		1 25	1 75
2	" " " 24 in., fancy Leather, 1½ in. Sheaves, 1½ in. Strap, to rivet on, for Monitor Decks .....each		1 50	2 00
2	" " " 24 in., fancy Leather, 2 in. Sheaves, 1½ in. Strap, to rivet on, for Monitor Decks .....each		2 25	3 00
3	" " " 24 in., fancy Leather, 2 in. Sheaves, 2 in. Strap, to rivet on, for Monitor Decks .. ..each		2 50	3 25
20	Heavy Bracket Strap Hangers, real Bronze, $4.50 each.			
21	Light " " Brass, $1.75 each ; Plated, $2.00.			

PRICE LIST OF RAILWAY CAR SUPPLIES—*Continued.*

Nos.	CAR DOOR BUTTS.	Bronzed.	Brass.	Silver Plated.
	CAST BRASS.			
	Howard's Car Door Butts, finely finished and fitted, Loose Joints, Steel Washers, 3¼ by 2⅜, per doz. pairs		$15 00	$24 00
	" " " finely finished and fitted, Loose Joints, Steel Washers, 3¼ by 3, per doz. pairs		18 00	30 00
	" " " finely finished and fitted, Loose Joints, Steel Washers, 4 by 3, per doz. pairs		24 00	39 00
	" " " finely finished and fitted, Loose Joints, Steel Washers, 5 by 5, per doz. pairs		78 00	108 00
	WITH ACORN ENDS.			
	Howard's Car Door Butts, finely finished and fitted, Loose Joints, Steel Washers, 3¼ by 2⅜, per doz. pairs		24 00	33 00
	" " " finely finished and fitted, Loose Joints, Steel Washers, 3¼ by 3, per doz. pairs		27 00	39 00
	" " " finely finished and fitted, Loose Joints, Steel Washers, 4 by 3, per doz. pairs		33 00	48 00
	" " " finely finished and fitted, Loose Joints, Steel Washers, 5 by 5, per doz. pairs		84 00	120 00
	Our customers will please notice the exactness with which our Butts are fitted, the bearings being nicely distributed upon the Steel Washers and Pins, thus securing the greatest wearing durability. Our Silver Plated Butts are well plated and burnished, and are of superior finish.—Real Bronze, 3 by 3, $2.37½ per pair ; 3½ by 3½, $2.75.			
	COAT AND HAT HOOKS.			
1	Howard's Coat and Hat Hooks, plain.....per doz.	$2 00	3 00	4 00
2	" " " size larger..... "	2 50	4 00	5 00
3	" " " fancy..... "		5 25	6 00
4	" " " " ..... "		6 00	7 00
5	" " " " ..... "		4 50	5 50
6	" " " Shield pattern, rich design, with Standard Pin...per doz.		13 50	24 00
12	" " " ..... "			24 00
7	" Hat Hooks, Double Standard, fancy, for top of Carline.....per doz.			36 00
8	" " Single Standard, burnished, for top of Carline.....per doz.			10 50
9	" " Single Standard, burnished, for top of Curtain Rod.....per doz.			12 00
1	" Coat Hooks, plain round, 4 inches long, burnished, per doz.		3 00	4 50
2	" " " 2 " burnished, broad base.....per doz.		4 50	6 00
3	" " curved..... "		3 00	4 50

PRICE LIST OF RAILWAY CAR SUPPLIES—*Continued.*

Nos.	CAR SASH AND BLIND FASTENERS.		Brass Ormolu.	Silver Plated.
2	Howard's Car Window Fasteners, Rim Shield pattern, Round Bolt, usual size...per doz.		$1 50	$2 50
4	" " " Rim Shield pattern, Round Bolt, smaller size, per doz.		1 50	2 50
6	" " " Rim Shield pattern, impr'vd, Round Bolt, heavy, per doz.		3 00	4 00
7	" " " Rim Shield pattern, impr'vd, Round Bolt, heavy, with Lift..... per doz.		4 50	6 00
8	" " " Half Mortise, Square pattern, Slide Bolt, without Spring.....per doz.			6 00
	" " " Half Mortise, Fancy pattern, Slide Bolt, without Spring, with Strike Plate, per doz.			13 50
10	" " " Rim, Oblong pattern, Slide Bolt, without Spring, per doz.			4 50
11	" " " Half Mortise, Shield pattern, combined Lift and Lock, long Bolt, with Bushing.....per doz.			15 00
12	" " " Half Mortise, Shield pattern, heavy, combined Lift and Lock, short Bolt, right and left hand, per doz.			18 00
	" " " Monkey Tail pattern, with Stops, No. 1 ....per doz.		1 00	1 50
	" " " Monkey Tail pattern, with Stops, No. 2.....per doz.		1 00	1 50
17	" " " Ornamental, complete, with Stops and Screws, per doz.	$7 00		
18	" " " Ornamental, complete, with Stops and Screws, per doz.	7 00		
	Wootten's Patent Sash Retainers, with Strike Plates ..per doz.			4 50
	Page's Patent Window Fasteners, Rim Shield pattern... "		1 50	2 25
	Safford's Patent Window Springs, for corners of Sash... "	2 00		
	Howard's Car Window Springs, flat Brass, $\frac{5}{8}$ inch, and $\frac{3}{4}$ inch wide.....per doz.	62½		
	" " " flat Steel, $\frac{5}{8}$ inch, and $\frac{3}{4}$ inch wide .....per doz.	85		
2	" Car Blind Springs, flat Steel, $\frac{1}{2}$ inch wide.... "	75		
	" " " flat Brass, $\frac{1}{2}$ " .... "	62½		
2	" " Fasteners, Rim, Round Bolt..... "		2 00	2 50
4	" " " Pull Bolt..... "		2 50	3 00
	" Strike Plates, for No. 2 Fasteners.....per gross		2 40	3 00
	" " for No. 2 Combination Fasteners, per gross		3 00	4 50
	" Rim Stops, for No. 2 Fasteners, short. .... per gross		2 40	3 00
	" " " 6 " long, with Pin, per gross		4 50	6 00
	" Thimble Stops for Fasteners..... "		240	3 00

PRICE LIST OF RAILWAY CAR SUPPLIES.—*Continued.*

Nos.	CAR WINDOW AND BLIND LIFTS.		Brass Ormolu.	Silver Plated.
6	Howard's Car Window Lifts, Dotted pattern, projects ¾ inch, ... per gross		$6 75	$8 00
7	" " " " Leaf pattern, projects ⅞ inch, ... per gross		6 75	8 00
9	" " " " Fancy pattern, burnished, projects ⅝ inch..... per dozen		1 00	1 25
11	" " " " Hood pattern, burnished, projects ½ inch..... per dozen		1 50	2 00
12	" " " " Fancy pattern, burnished, projects ⅝ inch, heavy, per dozen		1 25	1 75
13	" " " " Fancy pattern, burnished, projects ¾ inch..... per dozen		1 00	1 50
14	" " " " Fancy pattern, burnished, projects ¾ inch..... per dozen		1 00	1 50
15	" " " " Oval pattern, burnished, projects ⅞ inch..... per dozen		1 75	2 25
17	" " " " Recessed pattern, flush, burnished, 4 by 1½ inch, heavy, ... per dozen		3 50	6 50
18	" " " " Recessed pattern, with Hood, burnished, 4 by 1½ inch, heavy, ... per dozen		4 50	7 50
19–20	" " " " Recessed pattern, with Deep Hood, burnished, 4 by 1½ inch, heavy..... per dozen		6 50	10 50
22	" " " " ..... per dozen			3 00
23	" " " " Nickel-plated ..... per dozen	1 50	1 25	
24	" " " " " ..... "	1 25	1 00	
25	" " " " " ..... "	1 50	1 25	
5	Howard's Car Blind Lifts, Dotted pattern, projects ⅝ inch, per gross		4 50	8 00
8	" " " " Fancy pattern, burnished, projects ½ inch..... per dozen		1 00	1 25
10	" " " " Hood pattern, burnished, projects ½ inch. ..... per dozen		1 25	1 75
16	" " " " Oval pattern, burnished, projects ¾ inch..... per dozen		1 50	2 00
2	" " Double Blind Lifts, for Upper Blinds, burnished, ... per dozen		1 50	2 00
3	" " " " " for Lower Blinds, burnished, ... per dozen		1 75	2 50
	MONITOR DECK SASH OPENERS.			
	Howard's "Pull Rings," for opening Sash in Monitor Decks, per dozen		1 00	1 50
	Brown's Patent Monitor Deck Sash Openers, for Hinged Sash, each		2 00	2 50
	Stickney & McGee's Patent Monitor Deck Sash Openers, for Hinged Sash, ea.		3 75	4 75
	" " " " " " for Pivoted Sash, each		2 50	3 00
	Attention is called to the Stickney & McGee Sash Opener, as being the best in use. By it the sash is held firmly in any desired position.			
1	Howard's Monitor Deck Sash Pivots and Plates ..... per dozen		1 00	1 75
2	" " " " " " " ..... "		1 25	1 75
3	" " " " " " " heavy "		2 00	2 75
5	" Double Openers, real bronze..... each	5 00		
5	" Single " " " ..... "	3 00		
6	" End-sash " " " ..... "	2 50		
7	" Openers ..... "			2 50

PRICE LIST OF RAILWAY CAR SUPPLIES.—*Continued.*

Nos.	CAR SEAT FIXTURES.		Brass.	Silver Plated.
	Howard's Car Seat Arms, Malleable Iron, heavy pattern, plain,	per lb.	$0 14	
	" " " " " " light pattern, ornamental	per lb.	14	
	" " " " extra, for Milling	each	10	
	" " " " " " " and Bronzing	"	25	
	" " " " Cast Brass, plain pattern, heavy, polished	per lb.		$0 80
	" " " " Cast Brass, ornamental pattern, light,	per lb.		60
	Numbers, 1, 2, 3, 4, 5, 6.			
	Lengths, 10½, 11¼, 11½, 12, 12½, 13 inches.			
1, 3, 5,	Howard's Car Seat Stops, Old patterns, plain	per lb.		60
2, 4, 6,	" " " " " " ornamental	"		60
7	" " " " New " "	"		60
8	" " " " " " plain, polished,	pr doz.		2 50
9	" " " " " " " " for Romans' Patent Seat Lock,	per doz.		4 00
7	Howard's Car Seat Locks, Brass Bolt, Brass Key, with No. 7 Seat Stop	per dozen		6 00
7	" " " " in sets, complete, with Stops, Arm Plates, and Rivets for one Seat,	per set		2 00
8	" " " " Steel Bolt, Steel Key, with No. 8 Seat Stop	per dozen		6 00
8	" " " " in sets, complete, with Stops, Arm Plates, Hubs and Screws, polished, for one Seat	per set		2 25
9	" " " " for Iron Seat Frames, Steel Bolt, Steel Keys	per dozen		4 50
	Romans' Patent Car Seat Locks, attached to the Seat Arm,	per dozen		10 00
	Moore's Patent Car Seat Locks, attached to the Seat Arm, with one pair Stops	per dozen		15 00
7	Howard's Car Seat Arm Plates and Rivets, ornamental	per lb.		70
8	" " " " " " " polished	"		80
9	" " " " " Hubs and Screws, polished,	per dozen		3 00
	" " " " " Bolts, polished heads	per lb.		80
	" " " " Bolts, Iron, Slotted Heads, 3¼ by ⅜ inch, with nuts	per 100		
	Page's Patent Seat Back Springs	per 100	9 50	

Nos.	CAR LAMPS.	Gilt.	Bronze and Gilt.	Silver Plated.
	HOWARD'S CAR CENTRE LAMPS, FOR 1¼ INCH CANDLES.			
5	8 by 7 inch Globes, Plain, 4 round ornamented arms, each	$8 00		
6	8 " 7 " Engraved, 4 round ornamented Arms each	8 50		$12 50
7	7 " 9 " Melon Shape, Engraved, No. 1 pattern, 4 heavy, round, ornamented Arms each		$12 00	
7½	7 " 9 " Melon Shape, Engraved, No. 1 pattern, 4 square, ornamented Arms each		12 00	

PRICE LIST OF RAILWAY CAR SUPPLIES.—*Continued.*

Nos.	CAR LAMPS.—*Continued.*	Gilt.	Bronze and Gilt.	Silver Plated.
8	7 by 9 inch Globes, Melon Shape, Finely Engraved, 4 square ornamented Arms, each		18 00	
18	Palace Car Lamps, 8 by 10 inch Globes, Richly Engraved, 4 heavy, square, ornamented Arms, with Cast Brass Corner, and Top Ornaments, Cast Brass Couplings.....each		30 00	35 00
18	Palace Car Lamps, with Side Brace Arms.....each		32 00	38 00
20	Palace Car Lamps, 8½ by 10 inch Globes, Engraved, 4 square, ornamented Arms, with Cast Brass Corner and Top Ornaments, Cast Brass Couplings, and White Metal Reflectors.....each		20 00	25 00
22	Palace Car Lamps, (No. 20 Improved and Ornamented) Gilt Reflectors.....each	22 00	22 00	
	HOWARD'S CAR CENTRE LAMPS, FOR OIL.			
5	8 by 7 inch Globes, Plain, 4 round, ornamented arms, ¾ inch, C. O. Burners, each	7 00		
6	8 " 7 " Engraved, 4 round, ornamented Arms, ¾ inch C. O. Burners, each	7 50		11 50
9	9 "11 " Melon Shape, Engraved No. 1 pattern, 4 heavy, round, ornamented Arms, Sun Burners, each		12 00	
9½	9 "11 " Melon Shape, Engraved No. 1 pattern, 4 square, ornamented Arms, Sun Burners.....each		12 00	
10	9 "11 " Melon Shape, Finely Engraved, 4 square, ornamented Arms, Sun Burners..... each		18 00	
18	Palace Car Lamps, 8 by 10 inch Globes, Richly Engraved, 4 heavy, square, ornamented Arms, with Cast Brass Corner and Top Ornaments, Cast Brass Couplings, Sun Burners.....each		30 00	35 00
18	Palace Car Lamps, with Side Brace Arms, each		32 00	38 00
20	Palace Car Lamps, 8½ by 10 inch Globes, Engraved, 4 square, ornamented Arms, with Cast Brass Corner and Top Ornaments, Cast Brass Couplings, Sun Burners and Reflectors.....each		20 00	25 00
22	Palace Car Lamps, (No. 20 improved and ornamented) Gilt Reflectors.....each	21 00	21 00	
	Howard's White Metal Lamp Reflectors, 14½ inch, Convex and Concave.....each	3 00		
	" " " " " 16 in. Concave....each	3 50		
	" Centre Lamp Globes, of either style, furnished to order, and "Letters" or "Monogram" Engraved when desired.....each			
	" Smoke Jacks, for Centre Lamps.....each	2 00		

No. 24 Palace Car Lamp, Gilt, $28.00; No. 26 do., Plated, $35.00. Adjustable Globes $1.50 each, extra. Nos. 20, 22, 24, 26 Lamps include Reflectors in prices quoted.

All Lamps fitted to burn either Candles, Coal Oil, Sperm Oil, Lard Oil, or "Mineral Sperm" Oil, as desired.

PRICE LIST OF RAILWAY CAR SUPPLIES.—*Continued.*

Nos.	CAR LAMPS—*Continued.*	Gilt.	Bronze and Gilt.	Silver Plated.
1	Howard's Car Side Lamps, for 1¼ inch Candles, Plain Globes, each	$5 25		
2	" " " for 1¼ inch Candles, Engr'd Globes, each	5 50	$6 00	$7 00
2	" " " for " " " Globes, Cast Brass Couplings.....each	6 50	7 00	8 00
3	" " " for 1¼ inch Candles, Finely Engraved Globes, Cast Brass Couplings.....each		8 00	9 00
4	" " " for 1¼ inch Candles, Richly Engraved Globes, Cast Brass Couplings.....each		9 00	10 50
1	" " " for Oil, Plain Globes, ¾ inch C. O. Burners.....each	4 25		
2	" " " for Oil, Engraved Globes, ¾ inch, C. O. Burners.....each	4 50	5 00	6 00
2	" " " for Oil, Engraved Globes, ¾ inch, C. O. Burners, Cast Brass Couplings.....each	5 50	6 00	7 00
3	" " " for Oil, Finely Engraved Globes ¾ inch C. O. Burners, Cast Brass Couplings.....each		7 00	8 00
4	" " " for Oil, Richly Engraved Globes, ¾ inch C. O. Burners, Cast Brass Couplings.....each		8 00	9 50
	Howard's Car Candle Lamp Cylinders, complete.....per dozen	36 00	39 00	
	" " Candle Lamp Cylinders, complete, with Cast Brass Coupling.....per dozen	45 00	48 00	
	" " Oil Lamp Founts and Burners, complete, per doz.	18 00	21 00	
	" " Oil Lamp Founts and Burners, complete, with Cast Brass Coupling.....per dozen	24 00	27 00	
	" " Side Lamp Canopies, White Metal.....per dozen	18 00		
	" " Side Lamp Globes, of either style, furnished to order.			
	LANTERNS.			
1	Brady's Malleable Iron Railroad Lanterns, Single Guard per doz.			16 00
3	" " " " " Double " "			16 50
3	" " " " " Double " Red Signal.....per dozen			26 50
3	" " " " " Double Guard, Green Signal.....per dozen			22 00
3	" " " " " Double Guard, Blue Signal.... per dozen			22 00
14	" Brass Railroad Lanterns, Double Guard.....per dozen			48 00
	Discount on Brady's Lanterns, 10 per cent.			
	CAR CANDLES.			
	Howard's "Patent Wax," 1¼ inch Car Candles, Hydraulic Pressed.....per lb			33
	Justly acknowledged to be the best Car Candle manufactured.			

PRICE LIST OF RAILWAY CAR SUPPLIES.—*Continued.*

Nos.	CAR GAS FIXTURES.	
8	Howard's Car Gasaliers, Bronze and Gilt, Single Light, with Smoke Bells, without Globes.....each	
9	" " " Bronze and Gilt, Single Light, with Smoke Bells, without Globes.....each	$32 50
10	" " " Bronze and Gilt, Three Light, with Smoke Bells, without Globes.....each	45 00
11	" " " Bronze and Gilt, Single Light, with Smoke Bells, without Globes.....each	20 00
12	" " " Bronze and Gilt, Single Light, withSmoke Bells, without Globes.....each	30 00
13	" " " Blue and Gilt, Single Light, with Smoke Bells, without Globes.....each	30 00
14	" " " Bronze and Gilt, Two Light, with Smoke Bells, without Globes.....each	20 00
15	" " " Bronze and Gilt, Two Light, with Smoke Bells, without Globes.....each	20 00
	Howard's Car Side Brackets, to match Gasaliers, furnished to order.	
	Glass Globes for Gasaliers, Engraved, 7 inches.....per dozen	15 00
	" " " " " 8 " ..... "	15 00
	" " " " " 9 " ..... "	18 00
	The above Fixtures are made to use in connection with the United States Gas Light Company's Gas Machine, which we shall be happy to furnish to our customers when desired.	
	GONG BELLS.	
	Howard's Engine Gongs, 8 inch Bell, New Pattern, Iron Frame.....each	6 00
	" " " 8 " " " Brass Frame..... "	8 00
	" City Car " 5 " " " " Frame..... "	2 50
	" " " 5 " Plated, " Frame..... "	3 50

Nos.	CAR DOOR LOCKS AND LATCHES.	Japann'd	Brass.	Silver Plated.
31	Howard's Car Rim Locks, for Outside Doors, Iron Lift Latch and Lock Bolt, 1 Tumbler, per doz	$15 00	$42 00	$60 00
33	" " " for Outside Doors, Iron Lift Latch and Lock Bolt, 3 Tumblers, per doz	18 00		
41	" " " for Outside Doors, Brass Lift Latch, Steel Faced, Brass Lock Bolt, 1 Tumbler.....per dozen		44 00	60 00
43	" " " for Outside Doors, Brass Lift Latch, Steel Faced, Brass Lock Bolt, 3 Tumblers.....per dozen		45 00	63 00
44	" " " for Outside Doors, Brass Lift Latch, Steel Faced, with Night Lock Attachment, 1 Tumbler, per dozen	16 50	52 50	78 00
44¾	" " " for Outside Doors, Brass Lift Latch, Steel Faced, with Night Lock Attachment, 3 Tumblers, per dozen.		54 00	79 50
48¾	" " " for Outside Doors, Brass Lift Latch, Steel Faced, with Night Lock Attachment, 3 Tumblers, Brass Lock Bolt.....per dozen		55 50	87 00

PRICE LIST OF RAILWAY CAR SUPPLIES.—*Continued.*

Nos.	CAR DOOR LOCKS AND LATCHES.—*Continued.*	Japann'd	Brass.	Silver Plated.
200	Howard's Car Rim Locks, for Outside Doors, Brass Patent Swing Latch, 2 Br'ss Lock Bolts, 1 Br's Key, 1 thin Steel Key, per doz		$78 00	$108 00
144	" " " for Saloon Doors, Brass Latch, ½ Mortise, Flush Face, with Sliding Bolt .....per dozen		60 00	72 00
154	" " " for Sliding Doors, Brass Lift Latch, ½ Mortise Flush Face, with Sliding Bolt, complete with New Solid Knob, Cup and T Handle, per doz		72 00	84 00
235	" " Japanned Rim Locks, Swing Latch, per dozen	$ 18 00		
245	" " Brass " " " " "		45 00	
255	" " Real Bronze Rim Locks, Swing Latch, complete with Knobs and Escutcheons .....each		12 50	
710	" " Plated Rim Lock, with Knobs and Escutcheon, complete.....each			9 00
35	Howard's Car Rim Latches, for Saloon Doors, Brass Latch, Sliding Bolt.....per dozen	12 00		
35½	" " " for Saloon Doors, Brass Latch, without Sliding Bolt, per dozen	12 00		
45	" " " for Saloon Doors, Brass Latch, with Sliding Bolt .....per dozen		36 00	48 00
45½	" " " for Saloon Doors, Brass Latch, without Sliding Bolt, per dozen		36 00	48 00
60	" " " for Sliding Doors, Brass Lift Latch, without Sliding Bolt, per dozen		30 00	42 00
244	" " Real Bronze Saloon Latch, complete, with Knobs and Escutcheons .....each		10 00	
	" " Cylinder Rim Night Latches ..... per doz.			66 00
	" " Rim Lock Keys..... per doz.		2 50	
	" " Key Hole Plates.....per doz.		75	1 75
	CAR DOOR KNOBS.			
51	Howard's Car Rim Lock Knobs, 2 inches, for Saloon Locks, per doz. pairs		15 00	45 00
	Howard's Car Rim Lock Knobs, 2 inches, for Saloon Locks, with Cup and T Handle.....per doz. pairs		15 00	30 00
80	Howard's Car Rim Lock Knobs, 2¼ inches, for Outside Locks, per doz pairs		18 00	48 00
	Howard's Car Rim Lock Knobs, 2¼ inches, for Outside Locks, Swivel Spindles .....per doz. pairs		19 50	51 00
110	Howard's Car Rim Lock Knobs, 2¼ inches, White Porcelain, Plated Trimmings .....per doz. pairs			7 00
	Howard's Car Rim Lock Knobs, 2¼ inches, White Porcelain, Plated Trimmings, Swivel Spindles.....per doz. pairs			10 00
450	Howard's Car Rim Lock Knobs, 2¼ inches, Mineral, Japanned Trimmings.....per doz. pairs	3 00		
	Howard's Car Rim Lock Knobs, 2¼ inches, Mineral, Japanned Trimmings, Swivel Spindles .....per doz. pairs	7 50		

Nos.	FREIGHT CAR AND SWITCH LOCKS.	Japann'd	Brass.
10	Howard's Patent Iron Freight Car Locks, with Keys, per doz.	$24 00	
	" " " " " without Keys, "	22 50	

We ask attention to the above Locks, which we fully believe to be the strongest, safest and best Freight Car Lock now in use, having recently perfected them in strength and security, by several improvements. We shall be glad to send photograph or sample Lock when desired. Customers sending us their special Key can have our locks fitted to it.

PRICE LIST OF RAILWAY CAR SUPPLIES.—*Continued.*

Nos.	FREIGHT CAR AND SWITCH LOCKS.—*Continued.*	Japann'd	Brass.	
	Wootten's Patent Brass Freight Car Locks, with Keys, per doz.		$33 00	
	" " " " " without Keys, per doz.		27 00	
	Howard's Brass Freight Car Padlocks, Brass Hasps, with Keys.....per doz.		14 00	
	" Brass Freight Car Padlocks, Brass Hasps, without Keys.....per doz.		12 80	
75	" Brass Freight Car Seal Locks, with Hasps, per doz.		15 00	
76	" " " " " " " " "		25 00	
	" Brass Switch Padlocks, Brass Hasps, with Keys, per doz.		14 00	
	" " " " " " without Keys, per doz.		12 80	
	All of the above Locks have self-acting Covers to Key Holes.			
	Wrought Iron Padlocks, with Wro'ght Cases, Shackles and Bolts.			
213	2½ inches, Heavy, Extra Finish, 3 Tumblers and Bridge Ward, Spring Shackle and Drop.....per doz.	$10 00		
313	2½ inches, Heavy, Extra Finish, 3 Tumblers and Bridge Ward, Spring Shackle and Drop, with Chains, per dozen	12 00		
	Howard's Freight Car Card Receivers.....per doz.	$3 50		
	Perry's Patent "Door Holders," Brass Face, Cast Iron Frame, to be let into the floor.....per doz.	15 00	All Iron,	$12 00
	Detonating Fog Signals.....per gross.	14 00		
	Door Fenders, G. C. R. R. Pattern, Plated and Burnished, per doz.	33 00		
	Door Name Plates, Cast Brass, Silver Plated and Engraved, from $2.25 to $6.50 each.			

Nos.	WHITE METAL GOODS.		Britannia.	Silver Plated.
	Howard's White Metal 2½ Inch (Inside Diameter) Cast Lamp Rings.....per doz.		$6 00	
	" " " 3 Inch (Inside Diameter) Cast Lamp Rings.....per doz.		7 50	
	" " " 5 Inch (Inside Diameter) Cast Lamp Rings.....per doz.		9 00	
	" " " 6 Inch (Inside Diameter) Cast Stove Pipe Rings.....per doz.		10 50	
	" " " 7 Inch (Inside Diameter) Cast Stove Pipe Rings.....per doz.		16 50	
	" " " 8 Inch (Inside Diameter) Cast Ventilator Rings.....per doz.		19 50	
	" " " 9 Inch (Inside Diameter) Cast Ventilator Rings.....per doz.		18 00	
	" " " 10 Inch (Inside Diameter) Cast Ventilator Rings.....per doz.		30 00	
	" " " 11 Inch (Inside Diameter) Cast Ventilator Rings.....per doz.		30 00	
	" " " 12 Inch (Inside Diameter) Cast Ventilator Rings.....per doz.		31 50	
	" " " 13½ Inch (Inside Diameter) Cast Ventilator Rings.....per doz.		36 00	
	Howard's White Metal 14½ Inch (Outside Diameter) Convex Reflectors, for Centre Lamps...each		3 00	
	" " " 14½ Inch (Outside Diameter) Concave Reflectors, for Centre Lamps, each		3 00	

PRICE LIST OF RAILWAY CAR SUPPLIES—*Continued.*

Nos.	WHITE METAL GOODS.—*Continued.*	Britannia.	Silver Plated.
	Howard's White Metal, 16 Inch (Outside Diameter) Concave Reflectors, for Centre Lamps, each	$3 50	
	" " " 8 Inch (Outside Diameter) Canopies, for Side Lamps, 2 inch hole, each	1 50	
	" " " 8 Inch (Outside Diameter) Canopies, for Side Lamps, 3½ inch hole, each	1 50	
	" " " 9 Inch (Outside Diameter) Wash Bowls for Saloons, ... each	4 50	
	" " " 11 Inch (Outside Diameter) Wash Bowls ..... each	5 00	
	" " " 12 Inch (Outside Diameter) Wash Bowls ..... each	5 00	
	" " " 13 Inch (Outside Diameter) Wash Bowls ..... each	5 50	
	Plated Plugs and Couplings for Wash Bowls.....each		$1 50
	" Chain " " " per foot		17
	Howard's Soap Dishes, Side and Corner. .....each	3 00	4 00
	" Tumbler Holders..... each	3 00	4 00
	" Comb and Brush Holders..... each	6 00	7 50
	" Drinking Cups, (Name or Monogram Engraved, extra) each	1 50	3 00
1	" Match Lighters..... per doz.	5 00	
2	" 4–5 Match Lighters, Real Bronze..... per doz.	6 00	
3	" Match " " " ..... per doz.	7 50	
	Howard's White Metal Notice Plates, "Passengers not allowed to stand on the Platform," per dozen	24 00	
	" " " Notice Plates, "Ladies' Saloon," per dozen	18 00	
	" " " Notice Plates, "For Ladies only," per dozen	18 00	
	" " " Notice Plates, "For Gentlemen," per dozen	18 00	
	" " " Notice Plate Frames, for Printed Notices ..... per dozen	10 50	
	" " " 3½ Inch Block Letters and Figures, each	40	
	" " " 3½ Inch Curved Antique Letters and Figures..... each	40	
	" " " 5 Inch Ornamental Letters and Figures..... each	55	
	" " " 6½ Inch Tuscan Letters and Figures, each	1 20	
1	" " " Spittoons, with Lock Covers..... "	3 00	4 50
2	" " " Spittoons, with Lock Covers..... "		
	Name or Monogram Engraved on Spittoons, extra.		
	WHITE METAL CAR SEAT-BACK MOULDINGS.		
	No. 1 Pattern, 1-2 inch, Flat Top.....per foot	15	
	" 2 " 5-8 " " ..... "	18	
	" 3 " 5-8 " Round Top ..... "	18	
	" 4 " 3-4 " Flat Top..... "	21	
	" 5 " 3-4 " Round Top..... "	21	

No. 2 Notice Plates, Real Bronze, "Pat. not allowed," per dozen, $24.00.
No. 2 Notice Frames, (long) Real Bronze, per dozen, $10.50; No. 3, per dozen, $6.00; No. 4, per dozen, $5.00.

PRICE LIST OF RAILWAY CAR SUPPLIES.—*Continued.*

Nos.	CITY CAR TRIMMINGS.	Brass.	Plated.
	Howard's 5 Inch Brass Gongs and Frames, complete.....each	$2 50	$3 50
1	" Hand Rail Brackets.....per dozen	4 50	
2	" " " "Halves," "	3 00	
1	" Door Latches and Handles, complete .....per set	2 50	
2	" " " " " "	7 50	
	" " Sheaves .....each	2 00	
	" Strap Guides.....per dozen	2 50	
	" " Rollers, Wood Rolls..... "	3 00	
5	" Window Lifts ..... "	37½	50
4	" " Fasteners ..... "	1 50	2 50
	SLEEPING CAR TRIMMINGS.		Silver Plated.
	Howard's Berth Curtain Rods, 1 inch, heavy Brass Tubing, burnished.....per foot	50	1 00
	" Berth Curtain Rods, 1¼ inch, heavy Brass Tubing burnished.....per foot	75	1 50
	" Berth Curtain Rods, with Threads Cut, extra per Rod	25	
	" Window Curtain Rods, 5-16 inch, Brass Tubing, burnished.....per foot	20	37½
	" Window Curtain Rods, ⅜ inch, Brass Tubing, burnished.....per foot	25	45
	" Window Curtain Rods, ⅝ inch, Brass Tubing, burnished.....per foot	30	55
	" Window Curtain Rods, ¾ inch, Brass Tubing, burnished .....per foot	35	65
	Other sizes of Curtain Rods made to order.		
	Howard's Curtain Rod Hangers, for 1 inch Rods, Cast Brass, heavy, Rich pattern, 6½ inch.....each	3 50	4 50
	" Curtain Rod Hangers, for 1¼ inch Rods, Cast Brass, heavy, Rich pattern, 6½ inch.....each	3 50	4 50
	" Curtain Rod Centre Pendants, Brass Tubing, with Iron Rod, Rich pattern, for 1 inch Rods.....each	4 00	5 00
	" Curtain Rod Centre Pendants, Brass Tubing, with Iron Rod, Rich pattern, for 1¼ inch Rods.....each	4 00	5 00
	" Curtain Rod End Bases, for Partitions, Cast Brass, Round pattern, for 1 inch and 1¼ inch Rods, each	65	75
	" Curtain Rod End Bases, for Partitions, Cast Brass, Long "Dome" pattern, for 1 inch and 1¼ inch Curved Rods..... each		3 00
	" Curtain Rod Acorns, for End Finish to Curtain Rods, each	40	50
	" Curtain Rod End Standards, Cast Brass, Fancy, for ⅜ inch Rods.....per dozen	3 50	4 50
	" Curtain Rod End Standards, Cast Brass, Fancy, for ⅝ inch Rods..... per dozen	7 00	8 50
	" Curtain Rod End Standards, Cast Brass, Fancy, for ¾ inch Rods ..... per dozen	7 50	9 00
	" Curtain Rod Centre Standards, Cast Brass, Fancy, for ⅝ inch Rods, with Knob Finish .....per dozen	10 00	12 00
	" Curtain Hooks, Cast Brass, Russet Leather Covered, for 1 inch and 1¼ inch Rods .....per dozen		4 00
1	" Tassel Hooks, Cast Brass, Long Base..... "	2 00	2 50
2	" " " " Round Base..... "	2 00	2 50
	" Curtain Rollers, Brass Tubing Roller, with Cast Brass Trimmings..... each		2 50
	" Curtain Cord Tighteners.....each		1 25
	" Ticket Holders.....per gross	4 00	6 00
1	" Towel Racks, Brass Tubing Roller, Cast Brass Standards..... each	3 25	4 00
2	" Towel Racks, Cast Brass Trimmings, for Wood Rollers.....per set	3 25	4 00

PRICE LIST OF RAILWAY CAR SUPPLIES.—*Continued.*

Nos.	SLEEPING CAR TRIMMINGS.—*Continued.*	Brass.	Silver Plated.
	Howard's Berth Fasteners, complete, Concave Shells, Flush T Handles, Side Bolts and Strike Plates. .....each		$5 00
	" Berth Fasteners, complete, Convex Shells, Flush Handles, Side Bolts and Strike Plates .....each		5 00
	In these Berth Fasteners, the Handle is allowed to move *only* so far as is necessary to draw the Bolts, to which it is connected by Rods, instead of Wire.		
	Howard's Berth Hinges ..... each		
	" Seat and Back Hinges, Improved..... each	$ 0 75	1 00
	" Berth Rests, with Pivots.....each	1 00	1 50
	" Berth Bracket Stop..... .....each	40	50
	" Berth Arms, polished... .....each	3 25	
	" Berth Arms, Iron, bronzed.....each	2 75	
	" Upper Headboard Dovetailed Couplings.....per doz.	4 50	6 00
	" Upper Headboard Sliding Bolts, with Strike Plates, per doz	7 00	9 00
	" Lower Headboard Sliding Bolts, with Strike Plates, per doz.	7 00	9 00
	" Lower Headboard Swing Catches, with Strike Plates, per doz.	3 00	4 00
	" Chair Castors, Round Sockets. .... each	65	75
	" Chair Castors, Square Sockets .....each	75	1 00
	" Chair Castors, Square Sockets, with Sheave. .....each	1 25	1 50
	" Chair Castors, Square Sockets, with Pivot. .....each	1 25	1 50
	" Sofa Castors, Round Sockets, with Sheave ..... each	1 10	1 35
	" Table Hooks, with Plates..... .... each	70	80
	" Table Leg Hooks, with Plates.....each	70	80
	" Seat Arm Plates, 14 by 1¼..... .....each		2 00
	" Sliding Door Sheave Hangers, Old Pattern, 2 Hangers and Bar. .....per set		12 50
	" Sliding Door Sheave Hangers, New Pattern, with Extra Friction Rollers, Iron Bar, and Cast Brass Track ....per set		25 00
	CAR VENTILATORS AND REGISTERS.		
10	Howard's Patent "Reversible Hood" Car Ventilators, with Registers, with Flush Hood Plate, Bronzed, each	$5 00	
11	" " "Reversible Hood" Car Ventilators, with Registers, with Projecting Hood Plate, Bronzed, each	5 00	
	" " Self-Acting Ventilators, with No. 75 Register, complete.....	4 50	
	" " Self-Acting Ventilators, with No. 76 Register, complete.....	4 00	
	" " Self-Acting Ventilators, with No. 78 Register, complete.	4 25	
	Iron Connecting Rods for Ventilators, Threaded, and Fitted with Lock Nuts...extra per foot	07	
	Brass Connecting Rods for Ventilators, Threaded, and Fitted with Lock Nuts...extra per foot	10	
	Plated Trimmings, for reversing Ventilators, for one Car..... .....per set	8 00	
	Our Reversible Hood Car Ventilators, we believe to be the best *positive* Ventilators in use. In point of strength and finish, and in beauty of appearance they are superior. During the past year we have perfected the working of them, by using Rods instead of Cord, to connect them together, thus forming a rigid connection, which entirely overcomes the difficulties formerly experienced from the stretching of the Cord. By this improvement, we not only gain in the fact that each Ventilator is held firmly		

PRICE LIST OF RAILWAY CAR SUPPLIES.—*Continued.*

Nos.	CAR VENTILATORS AND REGISTERS.—*Continued.*	
	and *positively* in its place, and that in reversing all move as one, but also gain in the ease with which they can be worked; as, where we have before used a strong spring on *each* Ventilator, we now use the spring on each *end* Ventilator only (*i. e.* four to each car), these being sufficient to hold the whole line in place. The Rods are each cut with right and left hand threads, furnished with Lock Nuts, and coupled together at each Ventilator, the Deflecting Hoods being consecutively brought to their proper positions, and then secured. Our Registers are adapted to the various styles and finish of the Monitor Decks, and are furnished either with T Handles (for turning the slats) passing through the base of the roof, and projecting below it to within easy reach; or with Lever Handles, working horizontally in the Register. These last may be used with either style of finish, and are the kind most adopted. In ordering our Ventilators, please furnish the following details: Number of Ventilators to each Car; Distances from centre to centre of openings; Thickness of the side at top of opening; and if the Registers with T Handles are wanted, send sketch showing the shape of Deck.	
	Howard's Registers, Bronzed, used in connection with the Patent Reversible Ventilators	
10	8 by 8, with T Handles, connected at one side of Register, adapted to Decks with upright sides	
11½	8 by 8, with T Handles, connected at centre of Register, adapted to Decks with upright sides.	
11	8 by 8, with T Handles, connected at centre of Register, adapted to Decks with inclined sides	
11	8 by 8, with Lever Handles, connected at centre of Registers, adapted to Decks of either style	
11	6 by 6, with T Handles, connected at centre of Registers, adapted to Decks with inclined sides	
6	Improved, Cook's Patent Car Ventilators, with Registers, bronzed	$5 00
6	Registers, for Cook's Patent Car Ventilators, bronzed, each	3 00
1	8 by 8 Frieze Registers, Vertical Slats, Flush Fronts, bronzed, each	1 25
2	8 by 8 Frieze Registers, Horizontal Slats, Recessed Fronts, bronzed, each	1 25
3	6½ by 8 Frieze Registers, Horizontal Slats, Recessed Fronts, bronzed, each	1 25
4	7½ by 7 Frieze Registers, Horizontal Slats, Recessed Fronts, bronzed, each	1 25
5	5 in. Round Frieze Registers, Rotary Slats, Flush Fronts, bronzed, each	60
12	8 by 8 Frieze Registers, Horizontal Slats, Perforated Fronts, bronzed, each	1 75
13	Frieze Registers, Horizontal Slats, Perforated Fronts, bronzed, each	1 75
14	8 by 8 Frieze Registers, Horizontal Slats, Perforated Swell Fronts, bronzed, Circular Tops, each	2 25
	Frieze Perforated Face Plates, for Outside of Car, per doz.	3 00
	CAR HEATERS.	
	Howard's Patent Railway Car Heaters, for burning wood.	
18	18-inch Cast Iron Corrugated Body, Lock Latch, Mounted with Russia Iron Cover, each	22 00
24	24-inch Cast Iron Corrugated Body, Lock Latch, Mounted with Russia Iron Cover, each	25 00
22	22-inch Cast Iron Corrugated Body, Lock Latch, Mounted with Russia Iron Cover, New Improved Pattern, with Perforated Base instead of feet...each	27 50

PRICE LIST OF RAILWAY CAR SUPPLIES—*Continued.*

Nos.	CAR HEATERS.—*Continued.*			
18	Howard's 18-inch Cast Iron Corrugated Body, Lock Latch, Castings only..... per set	$15 00		
24	24-inch Cast Iron Corrugated Body, Lock Latch, Castings only.....per set	20 00		
22	22-inch Cast Iron Corrugated Body, Lock Latch, Castings only.....per set	20 00		
	Howard's Patent Stove-Pipe Dampers, so arranged that they may be firmly held at any point desired.			
	4 4½ 5 5½ 6 7 inches.			
	Price, $2 65 2 85 3 00 3 25 3 50 4 50 per doz.			
	Howard's Patent Stove-Pipe Damper Handles.....per doz.	1 20		
	Holmes' Patent Radiators, for Heaters, furnished with Howard's Patent Dampers.....each	5 00		
	WASH STANDS, WATER COOLERS, ETC.		Brass.	Plated.
	Howard's Wash Stand Sinks, Single Bowl, Iron, Porcelain Lined, each	7 00		
	Wash Stand Sinks, Double Bowl, Iron, Porcelain Lined.....each	13 00		
	Wash Bowl Stands, Iron, Painted.....each	6 00		
	Wash Bowls, White Metal. See "White Metal Goods."			
	Soap Dishes, White Metal. See "White Metal Goods."			
	Comb and Brush Holders, White Metal. See "White Metal Goods."			
	Tumbler Holders, White Metal. See "White Metal Goods."			
	Alcoves, for Partitions, White Porcelain, Plain...each	3 50		
	Alcoves, for Partitions, White Porcelain, Decorated, each	4 00		
	Alcoves, for Partitions, with Faucet, complete . each			$12 00
	Water Drips, Iron Porcelain Lined, 13½ by 11½ inches, each	4 50		
	Water Coolers, 6 Gallon, with Silver-plated Telegraph Faucets.....each	12 00		
1	Water Cooler Faucets, Telegraph Pattern, ⅜ inch, per doz.		$18 00	24 00
2	Water Cooler Faucets, Telegraph Pattern, 7-16 inch, short .....per doz.		18 00	30 00
2	Water Cooler Faucets, Telegraph Pattern, 7-16 inch, long.....per doz.		18 00	30 00
3	Water Cooler Faucets, Telegraph Pattern, ½ inch, long.....per doz.		30 00	39 00
	Wash Basin Faucets, Telegraph Pattern.....per doz.		42 00	54 00
	URINALS AND PRIVY TUBES.			
1	Howard's Corner Urinals, White Porcelain, 13 inch Backs, ordinary .....each	4 00		
2	Corner Urinals, White Porcelain, 13 inch Backs, new Patent Ventilating.....each	5 00		
	Side Urinals, White Porcelain, 6 inch Backs. ....each	5 00		
	Side Urinals, Iron, Bronzed, Porcelain Lined.....each	3 00		
1	Corner Urinals, Iron, Bronzed, Porcelain Lined.each	3 00		
1	Privy Tubes, or Hoppers, White Porcelain, 12½ inch diameter at top, 6 by 9 opening at bottom, 17 inches high above the floor, (Ordinary, $6.50), New Ventilating.....each	7 50		
2	Privy Tubes, or Hoppers, Iron, Porcelain Lined, 10 in. diam. at top, 5¼ by 8 opening at bottom, 16 inches high above the floor ..... each	5 00		
	Corner Urinal Handles..... per doz.		12 00	18 00
	Side Urinal Handles.....per doz.		12 00	18 00

PRICE LIST OF RAILWAY CAR SUPPLIES.—*Continued.*

ROUND AND FLAT HEAD NICKEL PLATED SCREWS.

1-2 Inch.		5-8 Inch.		3-4 Inch.		7-8 Inch.	
No.	3 $1 44	No.	3 $1 46	No.	4 $1 56	No.	6 $1 80
	4 1 48		4 1 50		5 1 64		7 1 94
	5 1 54		5 1 58		6 1 74		8 2 10
	6 1 64		6 1 68		7 1 85		9 2 29
	7 1 77		7 1 82		8 2 00		10 2 52
	8 1 92		8 1 96		9 2 18		11 2 81
	9 2 09		9 2 13		10 2 41		12 3 15
	10 2 31		10 2 34		11 2 65		13 3 65
			11 2 56		12 2 90		14 4 25
			12 2 89		13 3 28		15 4 86
					14 3 74		16 5 50
					15 4 34		
					16 5 04		

1 Inch.		1 1-4 Inch.		1 1-2 Inch.		1 3-4 Inch.	
No.	6 $1 86	No.	6 $2 12	No.	7 $2 85	No.	7 $3 69
	7 2 05		7 2 22		8 3 04		8 3 82
	8 2 28		8 2 40		9 3 37		9 3 94
	9 2 50		9 2 81		10 3 72		10 4 30
	10 2 78		10 3 26		11 4 14		11 4 69
	11 3 12		11 3 60		12 4 60		12 5 18
	12 3 57		12 4 20		13 5 16		13 5 82
	13 3 92		13 4 69		14 5 80		14 6 61
	14 4 40		14 5 16		15 6 60		15 7 54
	15 4 93		15 5 65		16 7 42		16 8 60
	16 5 64		16 6 17		17 8 37		17 9 77
	17 6 14		17 6 65		18 9 53		18 11 10
	18 6 64		18 7 25		20 12 32		20 12 81
			20 8 50				22 15 12

2 Inch.		2 1-4 Inch.		2 1-2 Inch.		2 3-4 Inch.	
No.	9 $4 57	No.	8 $4 13	No.	10 $5 66	No.	16 $11 20
	10 4 80		11 5 62		12 6 88		18 13 84
	11 5 24		12 6 05		13 7 69		20 17 22
	12 5 72		13 6 89		14 8 61		22 20 68
	13 6 64		14 7 78		15 9 45		24 25 02
	14 7 56		15 8 65		16 10 18		
	15 8 49		16 9 45		17 11 44		3 Inch.
	16 9 40		17 10 33		18 12 66		
	17 10 34		18 11 44		20 15 44		No. 16 $12 36
	18 11 25		20 12 76		22 18 25		18 15 00
	20 13 24		22 16 49		24 21 45		20 19 00
	22 16 58		24 19 53				22 23 09
							24 28 60
							26 35 20

PRICE LIST OF RAILWAY CAR SUPPLIES—*Continued.*

UPHOLSTERERS' GOODS.

IMPORTERS OF PLUSHES, MOQUETTES, TETUANS, REPS, LINEN SEAT DUCK, TARPAULIN CANVAS, RUSSIA SHEETING, ETC.

We are prepared to give the most advantageous quotations on these goods, and shall be pleased to furnish Samples, with Prices, when desired.

Mohair Plushes, Plain and Figured, in the various colors and qualities.....per piece	
Moquettes, in choice and rich designs, and in Patterns for Seats and Backs.....per yard	
Tetuans, " " " 54 inches wide..... "	
Perkinades, 54 inches wide .. "	
Linen Seat Duck, "Howard's R. R. quality," 18 in. wide, about 40 yds. per piece "	$0 42
" " " " " 20 " " 40 " " "	45
" " " " " 24 " " 40 " " "	50
Russia Sheeting, " " 40 " " 35 " " "	37½
Pelissier Padding, 20 inches wide, about 40 yards per piece ..... "	20
"Bear" Canvas, 26 " " " " " .....per piece	
Tarpaulin Roofing Canvas, "Howard's R. R. quality," 45 inches wide.....per yard	
" " " " " " 65 " "	
Burlaps, R. R. quality, 40 inches wide..... "	
Buckram, " 40 " "	
French Straining Web, 3½ inches wide.....per piece	
Seaming and Pasting Lace, Worsted, usual quality .....per yard	09
" " " " " extra fine quality..... "	12
Seaming Cord..... per lb.	
Tufting Twine..... "	
Tufting Nails, Plush Covered, Crimson and Green.....per gross	1 00
" " " " Scarlet ..... "	1 12½
" " Satin " ..... "	1 50
" " Tinned and Japanned..... "	50
Tufting Buttons, Plush Covered, Crimson and Green..... "	87½
" " " " Scarlet..... "	1 00
" " Brass..... "	75
" " Japanned.....per great gross	2 50
Upholstery Nails, French pattern, Brass.....per gross	87½
" " " " Plated ..... "	1 25
Head Lining Nails, Plated, Small Size..... "	37½
" " " " Large Size..... "	75
" " " Ivory Heads, Large Size ..... "	2 50
Upholsterers' Tacks, "Shelton Company's" Swedes Iron, full weight.	
2½ 3 4 6 8 10 12 14 16 18 20 22 24 ounces.	
08 09 10 12 14 16 18 20 22 24 26 28 30 cts. per paper, less.....per cent. discount.	
Lace and Gimp Head Tacks, "Shelton Company's," Swedes Iron, full weight.	
1½ 2 2½ 3 4 6 8 10 12 14 16 18 ounces.	
06 06 06½ 07½ 08½ 10 11 12½ 14 15½ 17 19 cts. per paper, less.....per cent discount.	
Car Seat Springs, Tempered Steel Wire, Japanned, 3 inch, Knotted. ..... per dozen	
" " " " " 4½ " " ..... "	50
" " " " " 6 " " (other sizes to order)	55
. per dozen	62½
" " Galvanized Iron Wire, 3 inch, Knotted, (other sizes to order) "	50
Enameled Cloth, Muslin, Black, Green, and other colors, at Market Prices.	
" " Drills, " " " " " "	
" " Duck, " " " " " "	
Linen Thread, "Marshall's," Black and White, in Skeins, " "	
" " " " Machine, in ½ lb. balls, at Market Prices.	

PRICES SUBJECT TO MARKET CHANGES.

PRICE LIST OF RAILWAY CAR SUPPLIES.—*Concluded.*

CAR HEAD LININGS.

ENAMELED AND ENCAUSTIC PRINTED AND DECORATED.

Printed Enameled (or Varnished) Car Head Linings..... per square yard $1 00

The Enameled Linings are the original style of finishing as furnished by us for years past, and which we continue to furnish, adding constantly to our variety of Patterns and Colors.

Printed Encaustic Car Head Linings..... per square yard 1 00

The Encaustic Process of finishing is of later date than the Enameled, and an improvement upon it.

These Linings are not varnished, and are designed to be used without varnishing. They can be thoroughly cleaned with soap and water (except Castile soap) without injury to the colors, and customers may feel perfect confidence in this manner of cleansing them, as each Lining is subjected to this treatment before leaving the factory.

Samples of Printed Linings furnished when desired.

Decorated Encaustic Car Head Linings.

The Encaustic process in these is the same as in the Printed Linings, and they can be treated in the same manner. In our long experience in manufacturing Decorated Linings for Drawing Room, Sleeping and Day Coaches, we have gained a reputation for excellence in quality of work and artistic designs, which will be maintained by the continued employment of skilled artists and workmen. Our superior facilities for producing them enable us to insure to our customers the greatest advantage in quality and cost. Prices are, of course, dependent upon the richness of finish and amount of labor expended in decorating, and range from $80 to $400. We furnish very handsome Linings for Day Coaches at from $125 to $175 each, and for Drawing Room and Sleeping Coaches at from $200 to $300 each.

In ordering, please send diagram giving full details of measurement, width covered by mouldings, position of lamps or other fixtures, and designate whether a roof or ground plan. For Drawing Room and Sleeping Coaches give additional lines, showing the division into compartments, &c., or sections.

COTTON ROOFING AND SEAT DUCK.

Manufactured expressly for Car use, and furnished in any desired width, without seam, to 144 inches.

Cotton Roofing Duck, Extra 4 ply..... per yard
Cotton Roofing Duck, Extra 3 ply..... per yard
Cotton Seat Duck, Extra heavy..... per yard

SLEEPING CAR BLANKETS.

Fine Wool Sleeping Car Blankets, Fancy Patterns..... per lb.

Furnished in special patterns, which will be reserved for the exclusive use of the purchaser when desired.

Our Sleeping Car Blankets are now in use on the prominent Sleeping Car Lines, where they may be seen.

Sleeping Car Toilet Quilts, in variety of Colors and Patterns..... each

Bunting—Red, White and Blue..... per piece
Cocoa Matting, Plain, from 2-4 to 7-4 wide..... per yard
Cocoa Matting, Fancy, from 2-4 to 7-4 wide..... per yard
Cocoa Mats, in variety of Styles and Sizes..... per sq. foot
Car Floor Oil Cloth, Heavy, Superior Quality, Oak and Fancy Colors, cut to sizes required, per sq. yard
Locomotive Torches, Polished Brass..... per doz. 42 00

PATENT FEATHER BRUSHES.

Bell Dusters, Plain Feathers, No. 10, $9.00; 12, $14.00; 14, $21.00; 16, $27.50; 18, $32.50; 20, $37 00; 22, $42.00; 24, $46.00; 26, $50.50; 28, $53.00 per doz.

Bell Dusters, Colored Feathers, No. 10, $10.50; 12, $16.50; 14, $23.50; 16, $30.00; 18, $37.00; 20, $42.00; 22, $46.00; 24, $50.50; 26, $53.00, 28, $56.00 per doz.

Car Washers, Plain Feathers, No. 1, $10 50; 2, $14.00; 3, $17.50; 4, $21.00 per doz.

Car Washers, "Pope's Eyes" Feathers, No. 1, $7.00; 2, $9.00; 3, $10.50 per doz.

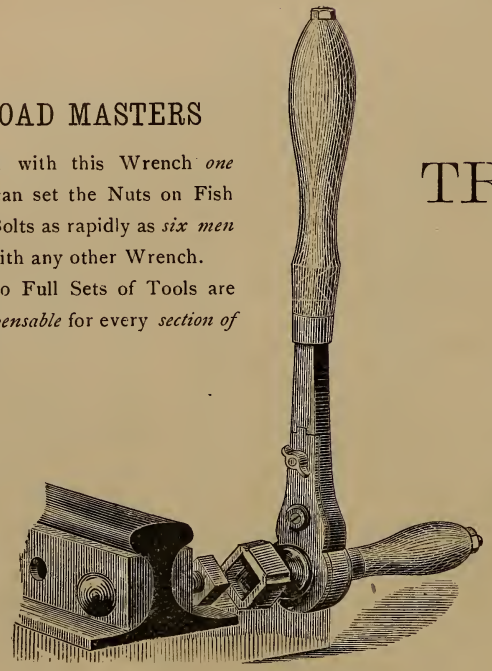
Car Washers, Bristle Brush..... per doz.

IMPROVED TRACK TOOLS.

ROAD MASTERS

Claim with this Wrench *one man* can set the Nuts on Fish Bar Bolts as rapidly as *six men* can with any other Wrench.

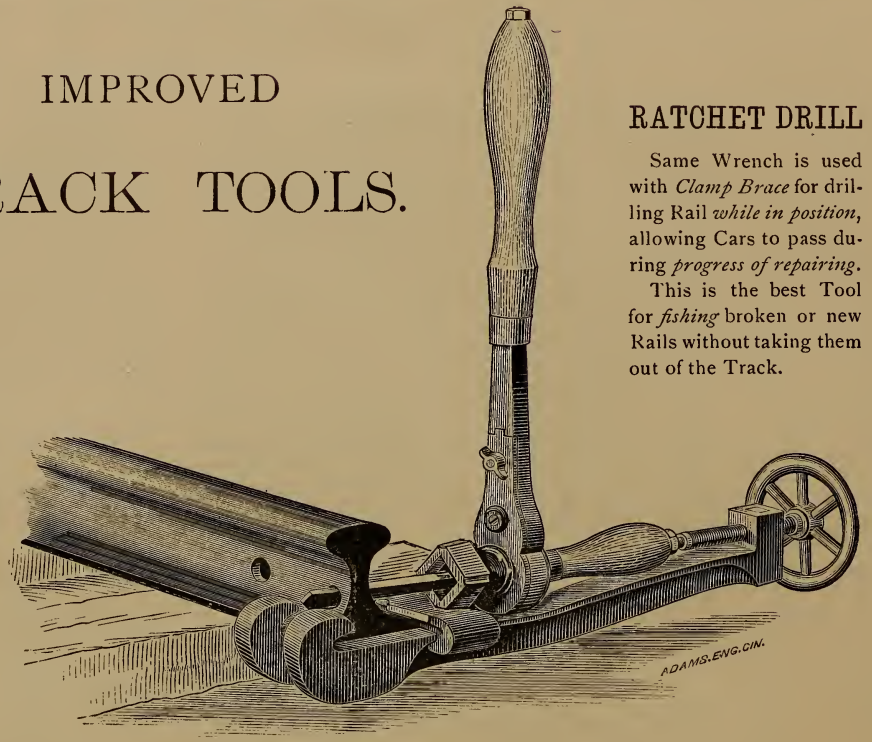
Two Full Sets of Tools are *indispensable* for every *section of road*.



RATCHET DRILL

Same Wrench is used with *Clamp Brace* for drilling Rail *while in position*, allowing Cars to pass during *progress of repairing*.

This is the best Tool for *fishing* broken or new Rails without taking them out of the Track.



Reversible Ratchet Wrenches, $8.00.

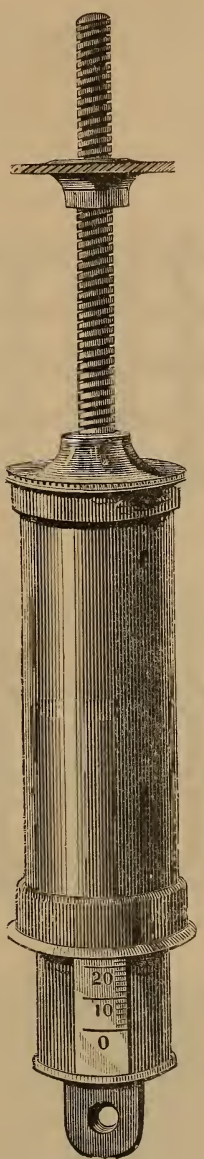
Full Sets of Tools, $16.00.

AN IMPORTANT FEATURE OF THE WRENCH.

When out of gear, you have a full hand hold of the nut. When in gear, the power of the eighteen inch handle can be employed. Button, B, on the handle of Wrench, is turned to reverse the ratchet. Best Malleable Iron used for all Sockets and Ratchet Wheels.

Sockets made to order for any sized nuts. Duplicate parts of Tools furnished. All Tools warranted to be as represented.

Locomotive Spring Balance.



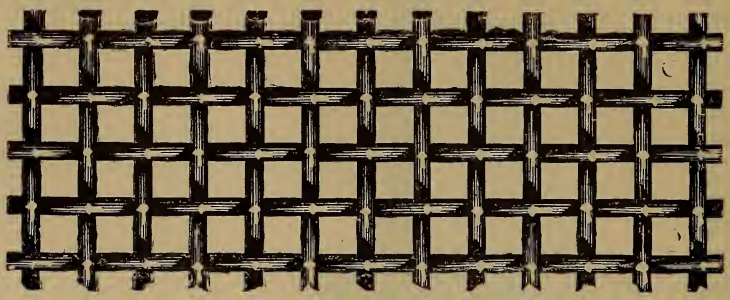
Genuine Salter's, ... $15 00 each.
Ashcroft's make, ... 12 00 "
Morton's " . . . . . 12 00 "

GONG BELLS.

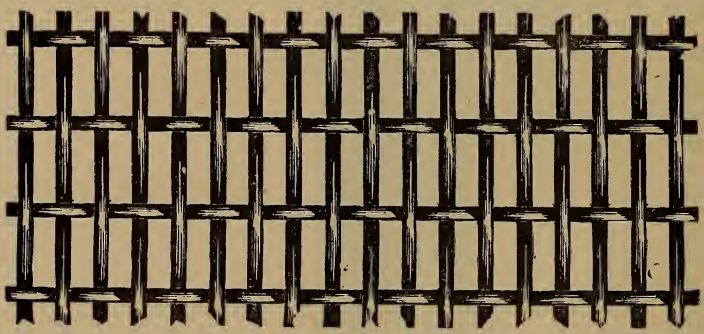
Diameter, . . .	4 inch.	6 inch.	7 inch.	8 inch.	10 inch.
Price, ...	$3 75	$4 75	$6 00	$7 25	$9 50

HEAVY LOCOMOTIVE

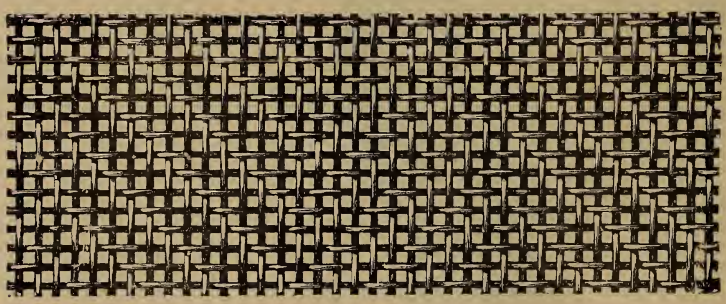
SPARK WIRE CLOTH.



3½x3½ Mesh, No. 13 Wire.



5x2 Mesh, No. 14 Wire.



10x10 Mesh, No. 20 Wire.

Other meshes made to order, of which we can not give diagrams, for Window Screens for Shops to protect the Glass, Plain or Fancy Patterns.

We make Brass Wire Cloth of Mesh, from 2 to 100.

LOCOMOTIVE CLOTHS.

No Less than 100 Feet shall be Considered a Roll.

IRON CRIMPED SPARK WIRE CLOTH.

PRICES.

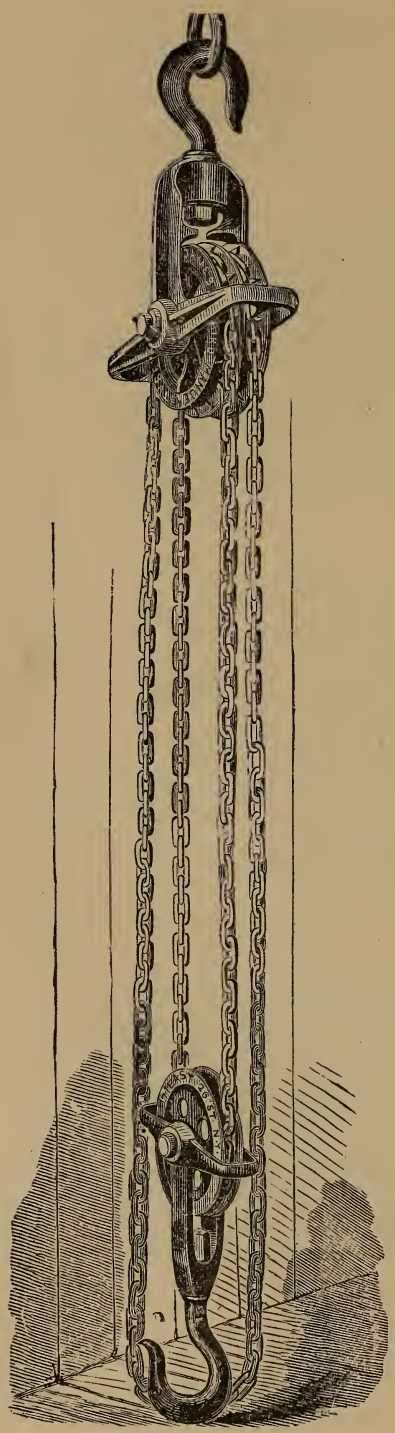
Nos.	2½	Mesh,	9½	Wire,	. . . .	$1	40	cents	per	square foot.
3	"		10½	"	. . . .	1	40	"	"	"
3	"		12	"	. . . .		70	"	"	"
3½	"		13	"	. . . .		70	"	"	"
4	"		13	"	. . . .		70	"	"	"
2x5	"		14	"	. . . .		70	"	"	"
5	"		15	"	. . . .		75	"	"	"
6	"		16	"	. . . .		75	"	"	"
8	"		18	"	. . . .		80	"	"	"
10	"		19	"	. . . .		80	"	"	"
12	"		20	"	. . . .		80	"	"	"

STEEL CRIMPED SPARK WIRE CLOTH.

Nos.	2½	Mesh,	9½	Wire,	. . . .	$1	50	cents	per	square foot.
3	"		10½	"	. . . .	1	50	"	"	"
3	"		12	"	. . . .		80	"	"	"
3½	"		13	"	. . . .		80	"	"	"
4	"		14	"	. . . .		80	"	"	"
2x5	"		14	"	. . . .		80	"	"	"
5	"		15	"	. . . .		85	"	"	"
6	"		16	"	. . . .		85	"	"	"
8	"		18	"	. . . .		90	"	"	"
10	"		19	"	. . . .		90	"	"	"
12	"		20	"	. . . .		95	"	"	"

TWILLED SPARK WIRE CLOTH.

Nos.	4	Mesh,	17	Wire,	. . . .	$0	30	cents	per	square foot.
5	"		18	"	. . . .		30	"	"	"
6	"		19	"	. . . .		30	"	"	"
8	"		20	"	. . . .		30	"	"	"
10	"		21	"	. . . .		32	"	"	"
12	"		22	"	. . . .		35	"	"	"



DIFFERENTIAL

Pulley Blocks.

No. 1.

One man can hoist from one to three tons, and the Block will hold the weight at any point.	Size of Block.	No. of ft. Chain in each Block.	No. of ft. Hand Chain in each Block.	Prices.	Additional Chain per ft.	
					Bl'k Chain.	Head Ch'n for Haul'g.
	1 Ton.	30	20	$50 00	45 c.	40 c.
	2 "	30	20	120 00	55 c.	40 c.
	3 "	30	20	160 00	60 c.	40 c.
	4 "	30	20	180 00	70 c.	40 c.
	5 "	30	20	200 00	90 c.	40 c.

No. 2.

One man can hoist from 500 to 1,000 lbs., and the block will hold at any point.

Size of Block.	No. of feet of Chain in each Block.	Prices.	Price for additional Chain per foot.
½ Ton.	26	$25 00	40 c.
1 "	30	30 00	45 c.
1½ "	34	40 00	50 c.
2 "	38	50 00	55 c.

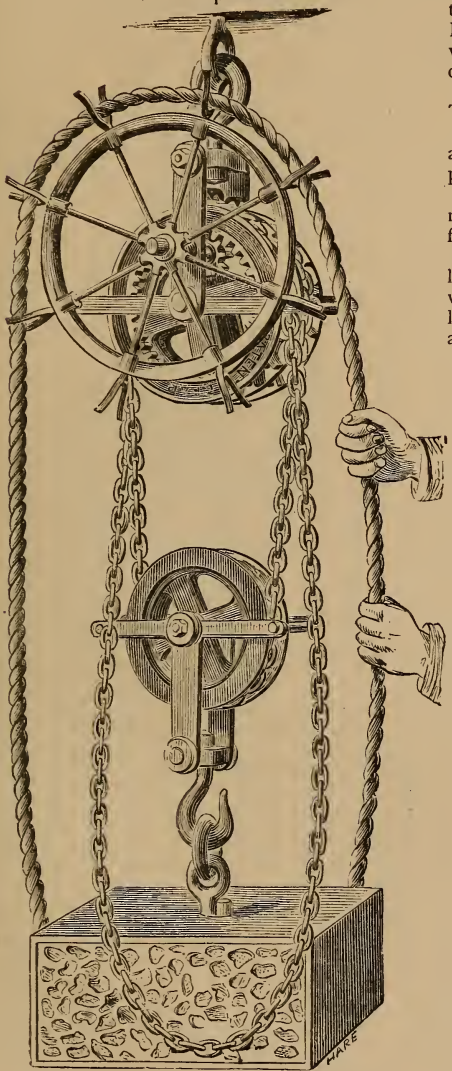
The peculiar merit attached to these Pulleys is, that while they are more powerful than ordinary Pulley Blocks, they also possess the novel and invaluable quality of not "running down," under any circumstances, while the load is suspended to them.

In ordering either size, please specify height of Lift, or state what chain is required, as all Blocks are as priced above, with the same number of feet of chain in each.

WESTON'S PATENT DIFFERENTIAL PULLEY BLOCKS.

Over 76,000 now in Use.

No. 1, with Sprocket Wheel.



The peculiar merit attached to these pulleys is, that while they are more powerful than ordinary Pulley Blocks, they also possess the novel and invaluable quality of not "running down" under any circumstances, while the load is suspended to them.

Wherever weights have to be lifted, this Hoisting Tackle will be found invaluable.

With No. 1, one man can raise two to three tons, and No. 2, one man can raise ten to twelve hundred pounds.

The sheaves are made of hardened metal, and do not soon wear out. The Chain is made especially for these Blocks.

In ordering either kind, please specify height of lift or state what chain is required. When worked with Sprocket Wheel, it takes about three times the length of lift. When worked by pulling the chain, about four times the length of lift is required.

Block Tested to.	No. Feet Chain in Each Block.	Price per Set.	Price for Add'l Chain, Per Foot.
2 Ton.	30 Feet.	$75 00	50 Cents.
3 "	30 "	100 00	50 "
4 "	30 "	125 00	50 "
5 "	50 "	200 00	60 "
6 "	50 "	300 00	70 "
8 "	50 "	400 00	75 "
10 "	50 "	500 00	80 "

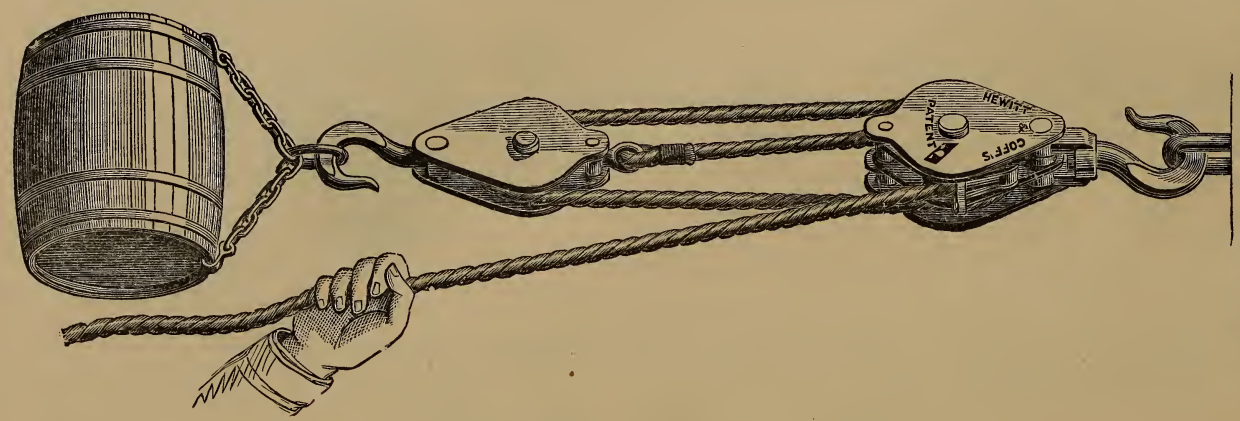
ROPE EXTRA.

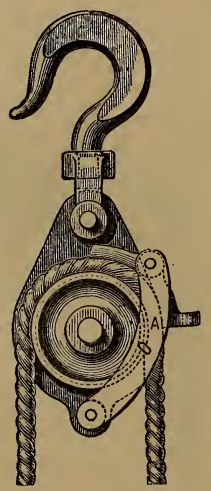
☞ Extra Sheaves, &c., furnished for repairs, also additional Chain.

No. 2, Without Sprocket Wheel.

Block Tested to.	No. Feet Chain in Each Block.	Price per Set.	Price for Add'l Chain, Per Foot.
½ Ton.	26 Feet.	$20 00	30 Cents.
½ "	26 "	25 00	30 "
1 "	30 "	30 00	40 "
1½ "	34 "	40 00	45 "
2 "	38 "	50 00	50 "
3 "	38 "	70 00	50 "

Self-Sustaining Rope Pulley Blocks.





Being worked with a rope the motion is quicker and steadier than that of any chain block. The extreme simplicity of construction renders it absolutely impossible to get out of order, as is often the case with chain blocks, from the stretching of a link in the chain. They are made of wrought iron, bright pulleys and swivel hooks.

It is self-sustaining, the eccentric brake being put in or out of action by moving the hand-rope to the right or left, or by pulling the rope outwards, causing it to touch the guides A. The weight can be lowered or sustained at any desired point.

To lower the blocks, pull down the hand-rope an inch or two, this will release the brake, then allow the rope to run freely through the hand.

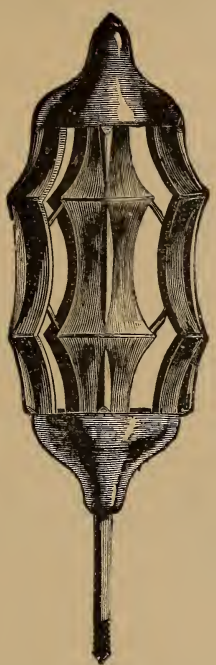
PRICES.

Diameter of Sheave / Width of Groove	2½ in. x ⅝	3½ in. x ½	4 in. x ⅝	4¾ in. x ¾	5 in. x 7/8	6 in. x 1
Each Sheave will lift about	1 cwt.	3 cwt.	5 cwt.	7 cwt.	10 cwt.	12 cwt.
1 pair 1 x 1 Sheave	6 55	6 75	7 80	9 40	12 40	13 00
1 " 1 x 2 "	7 40	8 15	9 25	11 10	13 50	15 50
1 " 2 x 2 "	8 80	9 60	10 55	14 10	17 20	17 85
1 " 2 x 3 "	9 65	10 40	11 85	14 75	19 35	20 30
1 " 3 x 3 "	10 50	11 55	13 00	15 85	20 80	22 50
1 " 3 x 4 "	11 60	12 15	14 10	18 10	23 55	26 00
1 " 4 x 4 "	12 70	13 10	15 70	20 15	26 40	30 00
Approximate weight of rope, per 100 ft.	4 lbs.	7¼ lbs.	11¼ lbs.	16¼ lbs.	22 lbs.	29 lbs.

BEST MANILLA ROPE 18 CTS. PER LB.

PRATT'S PATENT

ELASTIC BOILER-TUBE SCRAPER.



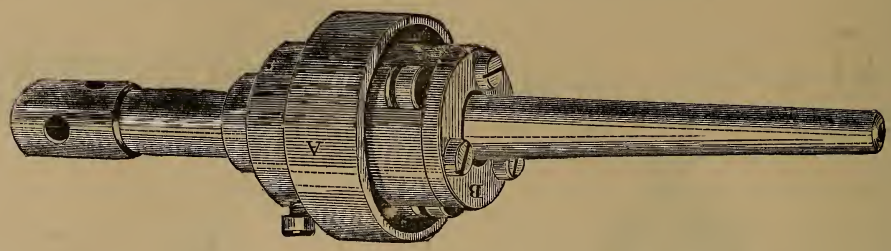
PRATT'S—$1.00 PER INCH.

CHRISTOFFEL.

CHRISTOFFEL'S GOODS.

TUBE CLEANER.		BRUSH SCRAPER.	
2 inches and under,	$2 00	1¼ inches,	$1 00
2¼ "	2 25	1½ "	1 00
2½ "	2 50	1¾ "	1 10
2¾ "	2 75	2 "	1 25
3 "	3 00	2¼ "	1 40
3¼ "	3 25	2½ "	1 50
3½ "	3 50	2⅝ "	1 60
3¾ "	3 75	3 "	1 75
4 "	4 00	3¼ "	2 00
4¼ "	4 50	3½ "	2 25
4½ "	5 00	4 "	2 50
5 "	6 00	4½ "	2 75
6 "	7 00	5 "	3 00

Dudgeon's Roller Tube Expander.

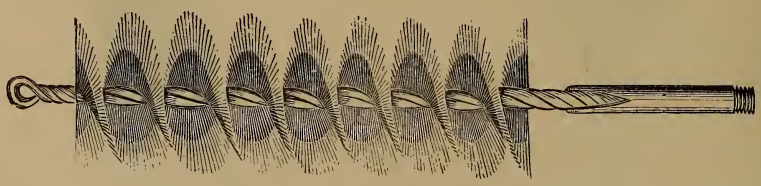


Size—inches	1	1¼	1½	1¾	1⅞	2	2¼	2½
Price, each	20 00	20 00	20 00	25 00	25 00	30 00	35 00	42 00

Size—inches	2¾	3	3¼	3½	4	4½	5
Price, each	48 00	55 00	60 00	70 00	85 00	100 00	120 00

These dimensions refer to the external Diameter of Tube.

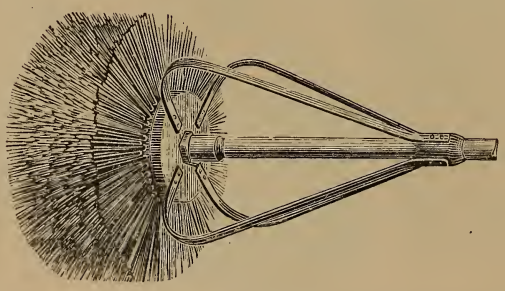
FLAT STEEL WIRE TUBE BRUSHES.



Outside Diam. of Tube.	Diam. of Brush.	Price, each.	Outside Diam. of Tube.	Diam. of Brush.	Price, each.
1¼	15–16	$1 60	2¾	2 6–16	$2 75
1½	1 3–16	1 70	3	2 10–16	3 00
1¾	1 7–16	1 90	3¼	2 14–16	3 25
2	1 11–16	2 10	3½	3 2–16	3 60
2¼	1 15–16	2 30	3¾	3 6–16	3 90
2½	2 2–16	2 50	4	3 9–16	4 25

In ordering Scrapers or Brushes, give the outside diameter of the tubes. The Brushes are calculated to be about one-eighth of an inch smaller than the inside diameter of the tubes.

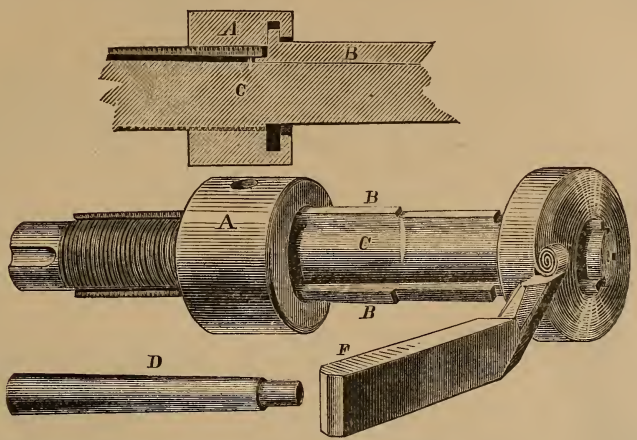
Coyle's Patent Steel Flue Brush.



Size.	Price.
4 inch,	$5 00
5 "	6 00
6 "	7 00
8 "	9 00
10 "	11 00
11 "	12 00
12 "	13 50

CHARLES REUTER. J. D. MALLORY.

LE COUNT'S
Patent Expanding Mandrel or Arbor.



Is made of steel, and is a true and stiff tool. Will hold better than a Mandrel driven by the hammer; do much better work than is generally done in that way, and where many changes are made, double the amount of it. All the working parts are hardened and well proportioned. It stands in about the same position to the Mandrel as the Horton or scroll does to the old wooden chuck. The range of the sizes made covers a large pile of the old style. They have now been before the public for four years, and we have yet to hear the first complaint. We could get recommendations by the hundred. Orders have been received for them from all parts of this country and Canada, and recently there has sprung up a demand for them in Europe. They are the cheapest labor-saving tool made. We make five sizes.

EXPLANATION OF CUT.

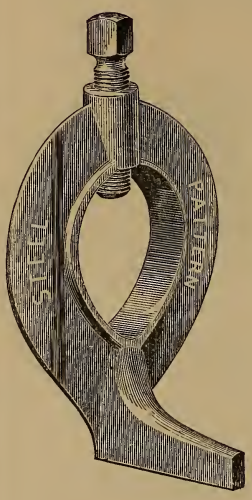
C is the steel Mandrel; B B are two of the three keys that are drawn up and pushed down by the nut; a groove is turned inside the nut A which catches the head of the key B, and thus draws them up to tighten the work; in the outside of the nut A is a taper hole which the pin D fits, and which answers for a wrench; this, like any Mandrel, requires a true hole to make a true job. Very heavy cuts, on large diameters, can be done on it without slipping. F represents the tool operating on a piece of work.

We guarantee the workmanship on this tool to be first-class. Any failure from bad work or material will be made good, and users will confer a favor by returning such to us.

No. 1 takes any hole inclusive between						½	and	1	inch,	.	.	. $12 00
" 2	"	"	"	"	"	1	"	1½	"	.	.	. 16 00
" 3	"	"	"	"	"	1½	"	2	"	.	.	. 20 00
" 4	"	"	"	"	"	2	"	3	"	.	.	. 40 00
" 5	"	"	"	"	"	3	"	4	"	.	.	. 60 00

LE COUNT'S
IMPROVED STEEL DOG,

WITH HARDENED STEEL SCREWS TURNED IN THE LATHE.



No. 1,	⅜ inch,	$ 60
2,	½ "	70
3,	¾ "	80
4,	1 "	90
5,	1¼ "	1 10
6,	1½ "	1 20
7,	1¾ "	1 40
8,	2 "	1 60
		$8 30

Price for a Set of eight small sizes, from ⅜ to 2 inches, inclusive, $8.00.

No. 9,	2½ inch,	$2 00
10,	3 "	2 20
11,	3½ "	2 60
12,	4 "	2 90
Price of four large sizes, inclusive,		$9 70

A Full Set of twelve Dogs from ⅜ to four inches, inclusive, $17.30.

LE COUNT'S
Patent Hollow Lathe Dog or Carrier,

OF MALLEABLE IRON.

They are thin so that the tool can be used close to the centre; strong and light; they are of a shape to hold; the screws are hardened in a way that they are not easily broken; they are perfect fits with full thread in the box.

No. 1,	⅜ inch,	$ 45
2,	½ "	45
3,	¾ "	60
4,	1 "	70
5,	1¼ "	90
6,	1½ "	1 00
7,	1¾ "	1 20
8,	2 "	1 40
		6 70

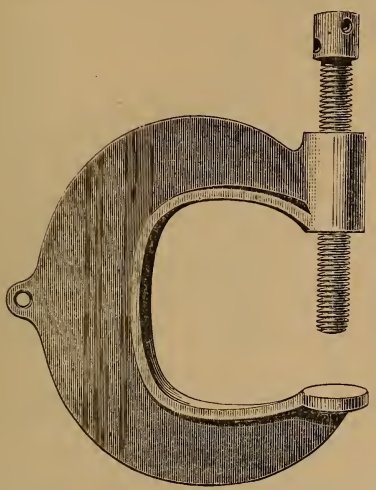
Price for a set of 8 small sizes, from ⅜ to 2 inches, inclusive, $6.50.

No. 9,	2½ inch,	$1 75
10,	3 "	2 00
11,	3½ "	2 40
12,	4 "	2 70
Price of four large sizes, inclusive,		$8 85

A Full Set of 12 Dogs, from ⅜ to 4 inches, inclusive, $15.00.

5 inch Dog,		$4 00
6 "	"	5 00
¼ "	"	45 cts.

LE COUNT'S NEW AND IMPROVED BOILER CLAMP.

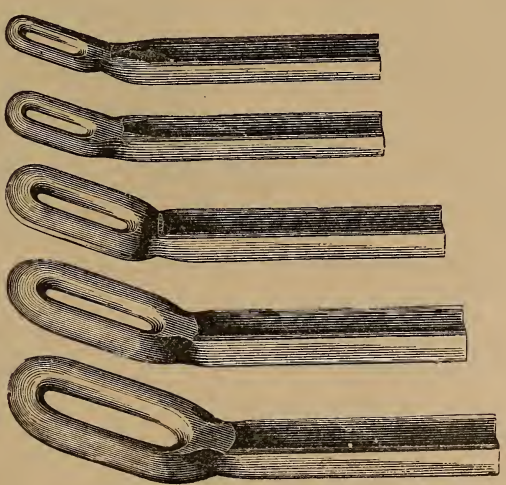


Is made of steel; is heavy and very strong; the foot is planed square by the screw; the screw is a good job, done in the lathe on true centres, and a good fit in a long nut with a full thread; is suitable for any heavy work; opens four inches from centre of screws, and runs back four and one-half inches.

PRICE $5.00.

LE COUNT'S STEEL CHUCK DRILL HOLDERS.

They are of five sizes, planed on the bottom to give a good bearing in Tool post. The slot is rounded every way, so as to avoid corners that interfere with centering the Drill.



PRICES.

No. 1, taking Drills from $\frac{3}{8}$ to $\frac{9}{16}$, 75 c.	No. 4, taking Drills from $1\frac{1}{8}$ to $1\frac{5}{8}$, $1.00
2, " " " $\frac{9}{16}$ " $\frac{3}{4}$, 75 c.	5, " " " $1\frac{5}{8}$ " 2, 1.00
3, " " " $\frac{3}{4}$ " $1\frac{1}{8}$, 90 c.	$4.40

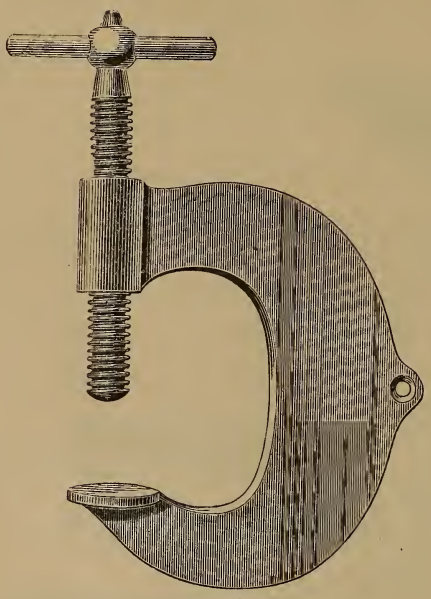
For the set of five Holders, $4.00.

CHARLES REUTER. J. D. MALLORY.

LE COUNT'S

STEEL CLAMP.

Is very strong, with long perfect screws, having hardened steel points. The foot is finished square by the screw. So there is no slip.

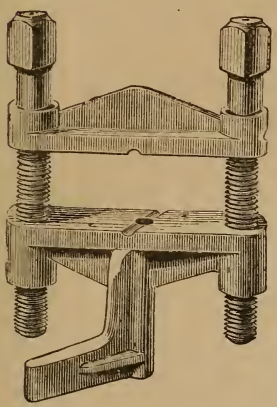


PRICE LIST OF STEEL CLAMPS.

No. 1, 2 inch,	$2 00
" 2, 3 "	2 25
" 3, 4 "	2 50
" 4, 5 "	2 75
" 5, 6 "	3 00

One set of five, inclusive from 2 to 6 inches, $12.50.

Le Count's Patent Clamp Dog.



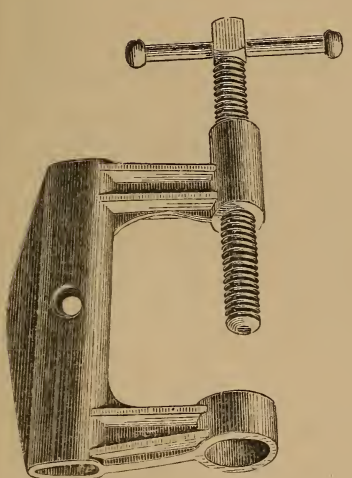
Used for finished work and for many other purposes. They are well made, and of four sizes, taking anything from close to the sizes given.

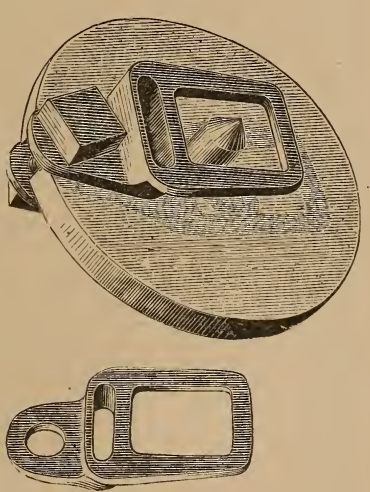
No. 1, 1	inch	between	screws,	. . .	$1 00
" 2, 1½	"	"	"	. . .	1 20
" 3, 2	"	"	"	. . .	1 60
" 4, 3	"	"	"	. . .	2 00
					$5 80

Price for the whole set, $5 25.

Le Count's Patent Machinist's Clamp.

MALLEABLE IRON WITH HOLLOW BACK.





No. 1, 2	inch,	. . .	$1 50	No. 4, 5	inch, . . . $2 25
" 2, 3	"	. . .	1 75	" 5, 6	" . . . 2 50
" 3, 4	"	. . .	2 00		

One set of five Clamps, inclusive, $10.00.

The foot is finished square by the screw. The screws are long and hardened, a perfect fit, with full thread in the box.

STRONG ENOUGH FOR MACHINISTS' USE.

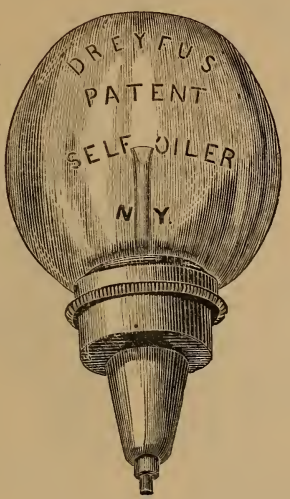
PRICE LIST OF TANITE EMERY WHEELS.

Diameter of Wheels in Inches.	Revolutions per minute.	THICKNESS OF WHEELS IN INCHES.															
		¼	½	¾	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	3¾	4
1½	14,400	$ 38	$ 40	$ 45	$ 50	$ 55	$ 60	$ 65	$ 70	$ 75	$ 80	$ 85	$ 90	$ 95	$1 00	$1 05	$1 10
2	10,800	44	50	56	62	68	74	80	86	92	98	1 04	1 10	1 16	1 22	1 28	1 34
2½	8,640	66	70	78	85	93	1 00	1 08	1 15	1 22	1 30	1 38	1 45	1 53	1 60	1 68	1 75
3	7,200	79	85	97	1 10	1 22	1 35	1 48	1 60	1 72	1 85	1 98	2 10	2 23	2 35	2 48	2 60
4	5,400	96	1 10	1 38	1 65	1 93	2 20	2 48	2 75	3 03	3 30	3 58	3 85	4 13	4 40	4 68	4 95
5	4,320	1 20	1 40	1 80	2 20	2 60	3 00	3 40	3 80	4 20	4 60	5 00	5 40	5 80	6 20	6 60	7 00
6	3,600	1 43	1 75	2 40	3 05	3 70	4 35	5 00	5 65	6 30	6 95	7 60	8 25	8 90	9 55	10 20	10 85
7	3,086	1 89	2 30	3 12	3 95	4 78	5 60	6 43	7 25	8 08	8 90	9 73	10 55	11 38	12 20	13 03	13 85
7½	2,880	2 00	2 45	3 33	4 20	5 08	5 95	6 83	7 70	8 58	9 45	10 33	11 20	12 08	12 95	13 83	14 70
8	2,700	2 12	2 60	3 55	4 50	5 45	6 40	7 35	8 30	9 25	10 20	11 15	12 10	13 05	14 00	14 95	15 90
9	2,400		3 15	4 38	5 60	6 83	8 05	9 28	10 50	11 73	12 95	14 18	15 40	16 63	17 85	19 08	20 30
10	2,160		3 70	5 15	6 60	8 05	9 50	10 95	12 40	13 85	15 30	16 75	18 20	19 65	21 10	22 55	24 00
12	1,800		4 00	5 68	7 35	9 03	10 70	12 38	14 05	15 73	17 40	19 08	20 75	22 43	24 10	25 78	27 45
14	1,570		6 20	8 45	10 70	12 95	15 20	17 45	19 70	21 95	24 20	26 45	28 70	30 95	33 20	35 45	37 70
16	1,350		8 00	10 85	13 70	16 55	19 40	22 25	25 10	27 95	30 80	33 65	36 50	39 35	42 20	45 05	47 90
18	1,222		9 50	13 25	17 00	20 75	24 50	28 25	32 00	35 75	39 50	43 25	47 00	50 75	54 50	58 25	62 00
20	1,080		11 00	15 50	20 00	24 50	29 00	33 50	38 00	42 50	47 00	51 50	56 00	60 50	65 00	69 50	74 00
22	1,000		13 00	18 62	24 25	29 87	35 50	41 12	46 75	52 37	58 00	63 62	69 25	74 88	80 50	86 12	91 75
24	917		15 00	22 00	29 00	36 00	43 00	50 00	57 00	64 00	71 00	78 00	85 00	92 00	99 00	106 00	113 00
36	611		33 00	48 50	64 00	79 50	95 00	110 50	126 00	141 50	157 00	172 50	188 00	203 50	219 00	234 50	250 00

Dreyfus' Patent Oilers.

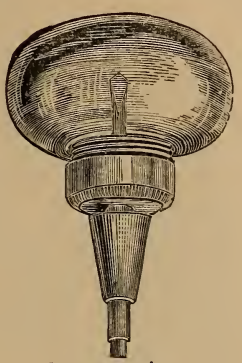
A SAVING OF FROM 50 TO 75 PER CENT. GUARANTEED.

No. 10.



$3\frac{1}{2}$ oz. capacity.
$2\frac{1}{4}$ in. diameter.
$4\frac{1}{2}$ inches high.

No. 0.



1 oz. capacity.
2 in. diameter.
$2\frac{1}{2}$ inches high.

PRICE LIST.

	Capacity.	Diameter.	Height.	Price per Doz.
No. 0—For Cards, Looms, Lathes, or for small Journals,	1 oz.	2 in.	$2\frac{1}{2}$ in.	$ 7 50
00—For Card Cylinders, Strippers and Compact Connections,	$\frac{3}{4}$ "	$1\frac{1}{8}$ "	$2\frac{1}{8}$ "	7 50
3—Ditto, to fill from top,	$\frac{3}{4}$ "	$1\frac{1}{8}$ "	$2\frac{1}{8}$ "	9 00
9—For Shaftings, Pickers, Looms and Fans,	$1\frac{1}{2}$ "	$2\frac{1}{2}$ "	$3\frac{1}{4}$ "	9 00
9 W. B.—For Compact Shaftings, or Connections,	$1\frac{1}{2}$ "	$1\frac{3}{4}$ "	$3\frac{1}{4}$ "	9 00
10—For Shaftings, Pickers, Looms and Fans,	$3\frac{1}{2}$ "	$2\frac{1}{4}$ "	$4\frac{1}{2}$ "	9 00
10 W. B.—For Compact Shaftings or Connections,	3 "	2 "	$4\frac{1}{2}$ "	9 00
11—For Shaftings or Connections where the Cups are required to be screwed in,	$1\frac{1}{2}$ "	$2\frac{1}{2}$ "	$3\frac{1}{4}$ "	12 00
12—	$3\frac{1}{2}$ "	$2\frac{1}{4}$ "	$4\frac{1}{2}$ "	12 00
13—To fill from top,	$1\frac{1}{2}$ "	$2\frac{1}{2}$ "	$3\frac{1}{4}$ "	10 50
13 W. B.—Ditto,	$1\frac{1}{2}$ "	$1\frac{3}{4}$ "	$3\frac{1}{4}$ "	10 50
14— Ditto,	$3\frac{1}{2}$ "	$2\frac{5}{8}$ "	$4\frac{1}{2}$ "	12 00
15—For Engines or Connections to be filled from top,	$3\frac{1}{2}$ "	$2\frac{5}{8}$ "	$4\frac{1}{2}$ "	15 00
18—For Upright Shafts, to order,	$3\frac{1}{2}$ "	$2\frac{5}{8}$ "	$4\frac{1}{2}$ "	24 00
22—For Small Engines, Connections or Lathes,	$\frac{3}{4}$ "	$1\frac{1}{2}$ "	$2\frac{5}{8}$ "	12 00
24—For Engines,	$2\frac{1}{4}$ "	$2\frac{1}{4}$ "	$3\frac{1}{2}$ "	15 00
25—For Heavy Bearings or Pillar Blocks,	8 "	3 "	$4\frac{1}{2}$ "	27 00

LOOSE PULLEY CUPS, WITH HOLLOW WIRES.

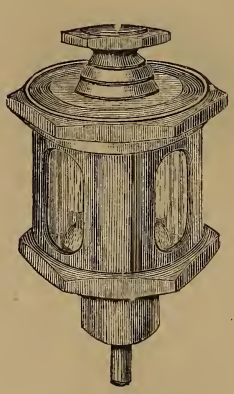
	Capacity.	Diameter.	Height.	Price per Doz.
No. 22,	$\frac{3}{4}$ oz.	$1\frac{1}{2}$ in.	$2\frac{5}{8}$ in.	$15 00
No. 23,	$\frac{1}{8}$ "	$\frac{7}{8}$ "	$1\frac{5}{8}$ "	15 00

CHARLES REUTER. J. D. MALLORY.

ENGINE CUPS.

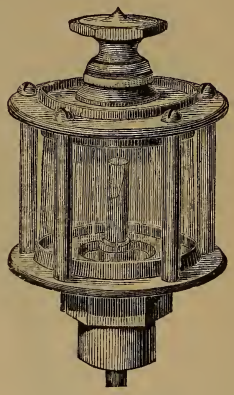
Nathan & Dreyfus' Patent.

Shell Cased, No. 42.



1¼ oz. Capacity.
2 in. Diameter.
4 in. High

Skeleton, No. 72.



2 oz. Capacity.
2⅜ in. Diameter.
4½ in. High.

PRICE LIST—ENGINE CUPS.

SHELL CASED.

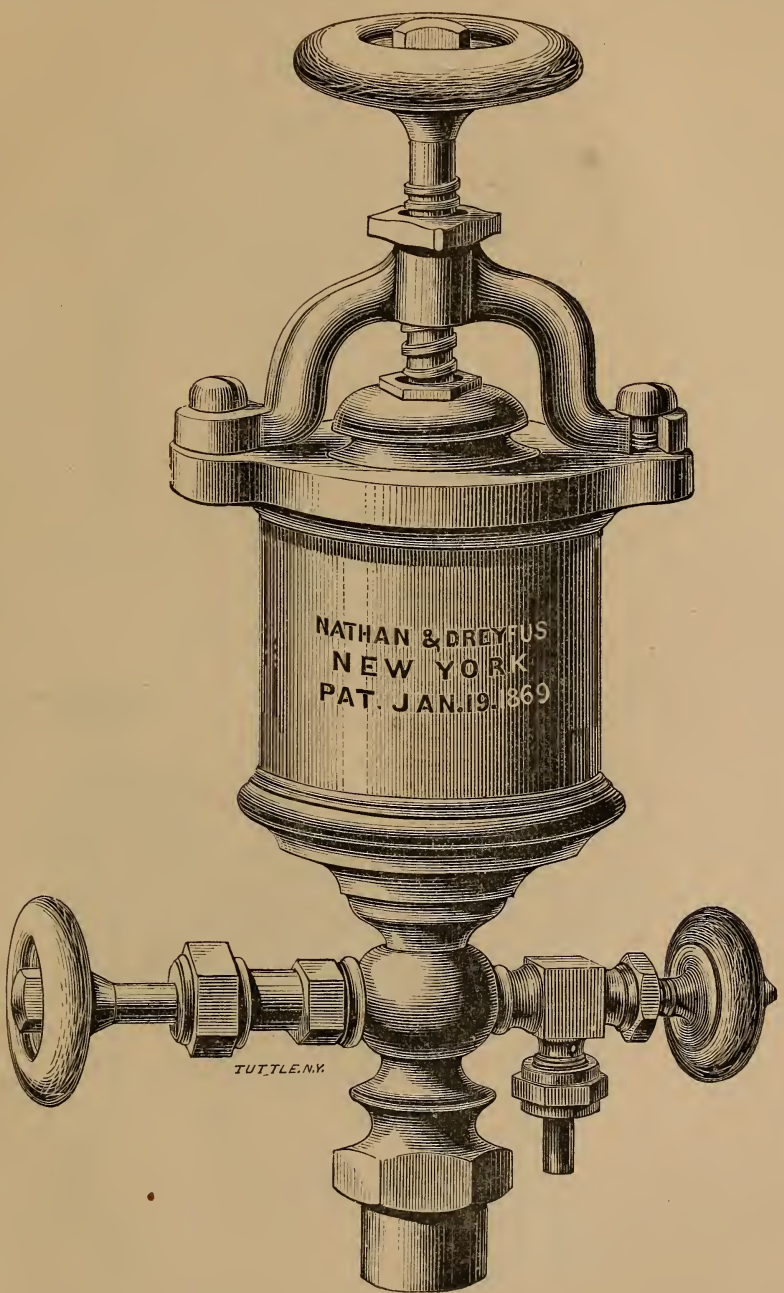
	Capacity.	Diameter.	Height.	Price per doz.
No. 20,	1-16 ounce.	1 inch.	1½ inch.	$ 15 00
21,	⅛ "	1⅜ "	2¼ "	24 00
28,	¼ "	1½ "	2½ "	36 00
36,	1 "	2 "	3½ "	48 00
42,	1¼ "	2 "	4 "	48 00
60,	2½ "	2⅜ "	4½ "	60 00
72,	2 "	3 "	4½ "	72 00
100,	1 quart.	10½ "	16½ "	240 00

SKELETON.

	Capacity.	Diameter.	Height.	Price per doz.
No. 30,	¼ ounce.	1¾ inch.	2½ inch.	$ 30 00
46,	1¼ "	2¼ "	3½ "	48 00
48,	1¼ "	2⅜ "	3¾ "	48 00
54,	1 "	2¼ "	3⅜ "	54 00
60,	1¼ "	2½ "	3¾ "	60 00
72,	2 "	2¾ "	4½ "	72 00
76,	4½ "	3⅜ "	5½ "	84 00
100—Iron Mounted,	1 quart.	10½ "	16 "	120 00
100—Brass Mounted,	1 "	10½ "	16 "	180 00
32—Iron Mounted,	8 ounce.	4½ "	6 "	42 00
32—Brass Mounted,	8 "	4 "	6 "	72 00

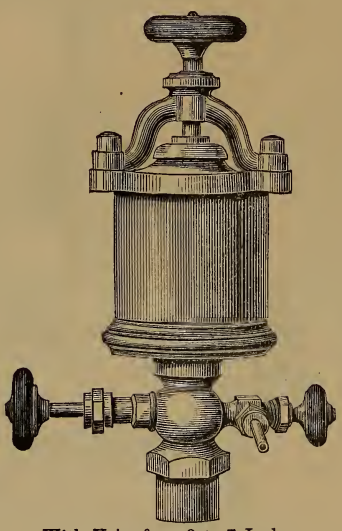
Crank-pin Cups for Upright Engines to order.

PATENT SELF-ACTING LUBRICATOR.

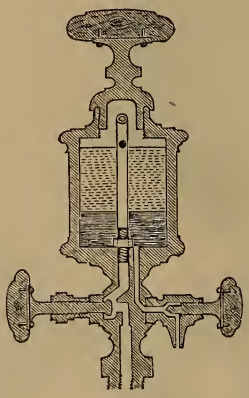


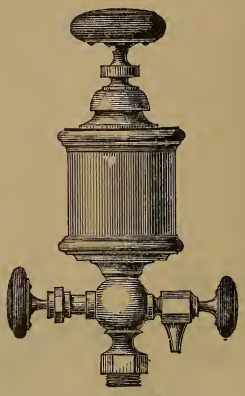
Automatic Lubricators for Cylinders.

NATHAN & DREYFUS' PATENT.



With Yoke from 3 to 7 Inches.





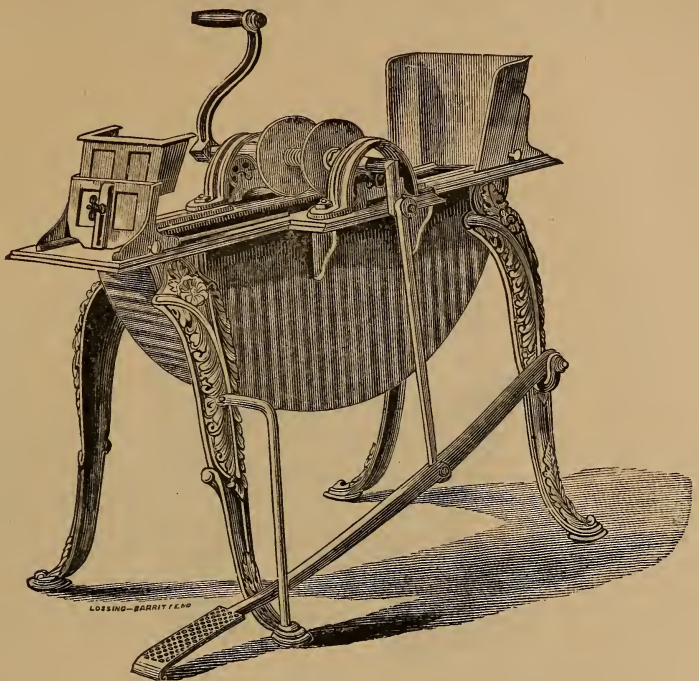
Plain Top from 1 to 4 Inches.

PRICE LIST.

Size, inches, . . .	1	1½	2	2½	3	4	5	6	7
Plain, ...	$4 00	6 00	8 00	10 00	12 00	16 00			
With Yoke, ...					20 00	27 00	36 00	45 00	60 00

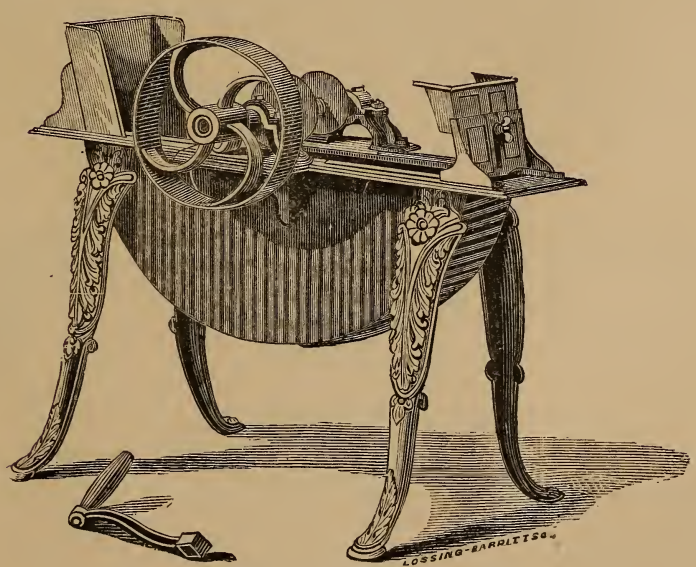
CHARLES REUTER. J. D. MALLORY.

PATENT CASTIRON GRINDSTONE FRAME.



Arranged to be worked by hand or foot.

Size of stone, 30 in. x 3½ in., ... $15 00

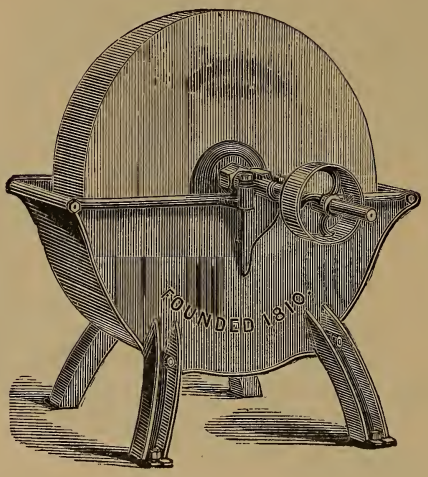


Arranged for power or foot.

Size of stone, 30 in. x 4½ in., ... $18 00

Machinists' Grindstones

NEW PATTERN.



These are made with cast-iron sides, with a groove cast on the inside of each, in which a heavy galvanized plate is fitted. The sides are then bolted together, with cemented joints, which makes the box water-tight. The legs are cast in one piece and firmly bolted to the sides. This box is a great improvement over the solid cast-iron one, being much lighter, cheaper, and just as durable.

PRICES.

Fitted with 34 in. x 4 in. Stones, ...	$ 65 00
" " 47 in. x 6 in. "	110 00
" " 54 in. x 6 in. "	135 00

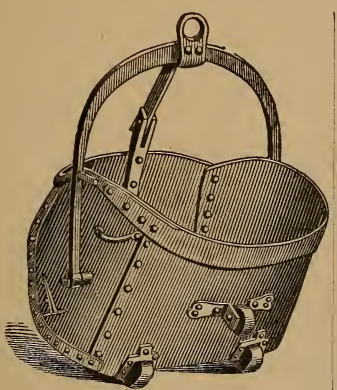
Pulleys extra.

PRICE OF GRINDSTONES.

Berea, ...	per lb.
Ohio, ...	"
Nova Scotia, ...	"
New Castle, ...	"

Patent Iron, Coal and Ore Tubs.

These Tubs are of two kinds, viz: Light for horse power use, and heavy, for steam power. The scoop form, and the manner of construction of these Tubs are universally approved. They an be more quickly filled and more easily dumped than any other form of tub.



Prices of Light or Horse Power Tubs.

Capaci'y,	8	holding	1 ton	Coal.....	$75 00 per pair.
"	6	"	1 ton	"	80 00 "
"	5	"	1 ton	"	85 00 "
"	4	"	1 ton	"	100 00 "

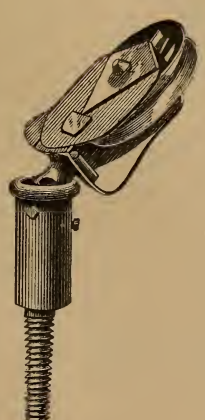
Prices of Heavy & Steam Power Tubs.

Each	holding	500	lbs.	Coal	$70 00 each.
"	"	600	"	....	80 00 "
"	"	700	"	....	95 00 "
"	"	800	"	....	100 00 "
"	"	900	"	....	105 00 "
"	"	1000	"	....	110 00 "

Dumping rigging—small... ....$15 00 each. | Dumping rigging—large $20 00

(This is used when coal is dumped on the dock in heaps, and is operated by the man managing the guy ropes.)

Patent Iron Dock Blocks.



These are sometimes called "snatch blocks," and are screwed into the dock timbers, or in a block in the ground, and have a swivel joint and spring to adapt themselves to any direction of the rope.

PRICES.

For 1 inch Rope or Chain, without friction rollers, 7 inch sheave, each, ...	$15 00
For 1 inch Rope or Chain, steel friction rollers, 7 inch sheave, each, ...	18 00
For 1½ inch Rope or Chain, steel friction rollers, 10 inch sheave, each, ...	22 00
For 1½ inch Rope or Chain, steel friction rollers, 15 inch sheave, each, ...	24 00

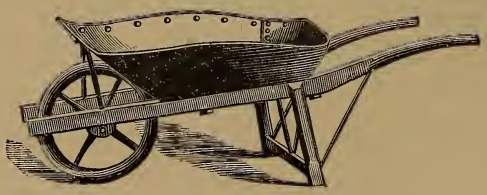
IRON HOOK BLOCKS.

These are also made of Iron, with a hook to hang at the end of the gaft.

1 inch Rope,	without	friction	rollers,	7	inch	sheave,	each,	$	6	00
1 "	"	or chain,	"	"	7	"	"	"	7	50
1½ "	"	"	"	"	10	"	"	"	12	00
1½ "	"	"	"	"	15	"	"	"	16	00
1½ "	"	"	Double Hook, with friction rollers,							
15 inch sheave, each, ...									20	00

IRON BOX WHEEL-BARROWS.

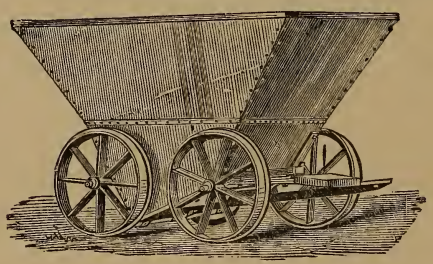
These Wheel-barrows are made with iron boxes, and are about as light as wood and much more durable.



PRICES.

Each holding	200	lbs. coal,	$21 00	Each holding	325	lbs. coal,	$22 00
" "	250	"		" "	400	"	24 00

IRON CARS.

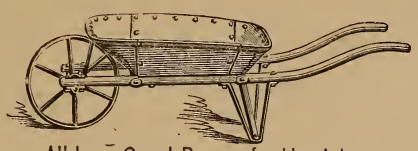


These are made of iron, are self-dumping, and will hold one ton of coal each.

PRICE $175.00.

PATENT

TUBULAR WHEELBARROWS.



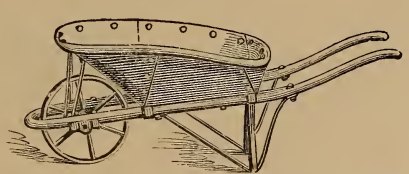
All Iron, Canal Barrow for Hot Ashes.

PRICES.

No. 1,	$14 00
No. 1½,	15 00
No. 2,	16 00
No. 3,	17 00

All Iron Coal Barrows.

FOR HOT ASHES, COKE, &c.



All Iron Coal Barrow, for Hot Ashes, Coke, &c.

SIZE.	PRICE.
A, with tray holding 300 lbs. of Coal,	$26 00
B, " " " 400 " "	29 00
C, " " " 260 " "	26 00
D,	22 00
E,	28 00
F,	16 00
G,	16 00

WIRE ROPE.

NINETEEN WIRES TO THE STRAND.

IRON.								STEEL.				
Trade Number.	Circumference in Inches.	Diameter.	Breaking Strain in Tons of 2000 lbs.	Proper Working Load in Tons of 2000 lbs.	Circumference of Hemp Rope of Equal Strength.	Min. Size of Drum or Sheave in feet.	Price per Foot in cents.	Breaking Strain in Tons of 2000 lbs.	Circumference of Hemp Rope of Equal Strength.	Proper Working Load in Tons of 2000 lbs.	Min. Size of Drum or Sheave in feet.	Price per Foot in Cents.
1	6¾	2¼	74	15	15½	8	144	107		22	9	187
2	6	2	65	13	14½	7	125	97		20	8	164
3	5½	1¾	54	11	13	6½	108	78	15¾	18	7½	141
4	5	1⅝	44	9	12	5	93	64	14½	13	6	121
5	4⅝	1½	35	7	10¾	4½	78	52	13	11	5½	103
6	4	1¼	27	5½	9½	4	63	39	12½	9	5	84
7	3½	1⅛	20	4	8	3½	49	30	10	6	4½	64
8	3¼	1	16	3	7	3	40	24	9¼	5	4	52
9	2¾	⅞	11½	2½	6	2¾	33	20	8¼	4	3¾	43
10	2½	¾	8.64	2	5	2½	30	13	6½	3	3½	39
10¼	2	⅝	5.13	1¼	4½	2	28	7	5	2	3	37
10½	1⅝	9-16	4.27	¾	4	1¾	27	5	4¼	1¼	2¾	36
10¾	1½	½	3.48	½	3¾	1½	26					

Tiller Rope, ⅝ in. Diameter, 30 cents per foot.
" " ½ in. " 25 " "

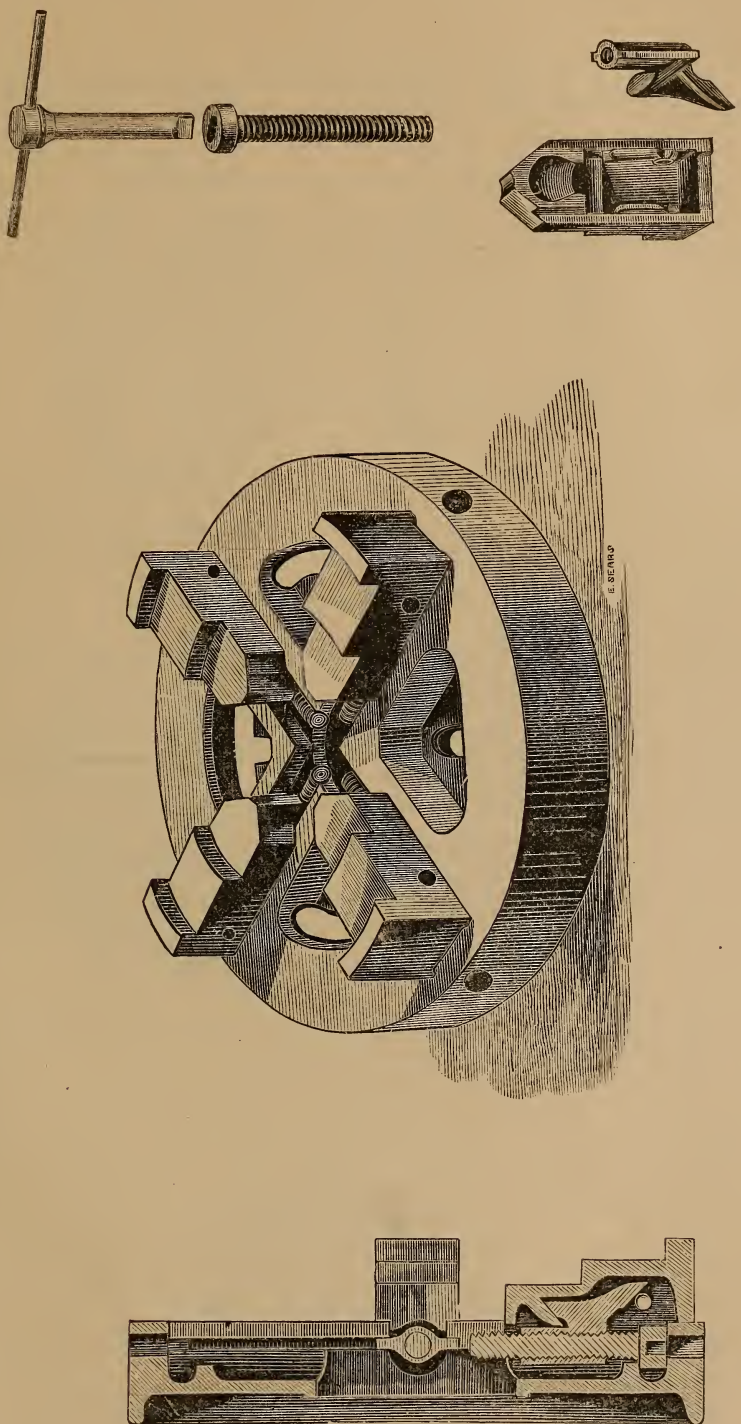
All kinds of Shackles, Sockets, Swivel Hooks, and Fastenings put on; Splices made for Belt Ropes.

SEVEN WIRES TO THE STRAND.

IRON.						STEEL.			
Trade Number.	Circumferences.	Diameter.	Circumference of Hemp Rope of Equal Strength.	Ultimate Strength in Tons of 2000 lbs.	Proper Load in Tons of 2000 lbs.	Price per Foot in Cents.	Circumference of Hemp Rope of Equal Strength.	Ultimate Strength in Tons of 2000 lbs.	Proper Load in Tons of 2000 lbs.	Price per Foot in Cents.	Trade Number.
11	4⅝	1½	10¾	36	9	64	13	50	12½	84	11
12	4¼	1⅜	10	30	7½	56	12	43	10	74	12
13	3⅞	1¼	9½	25	6¼	49	10¾	36	9	63	13
14	3⅝	1⅛	8¼	20	5	42	9	29	7	54	14
15	3	1	7¼	16	4	34	8	23	6	45	15
16	2⅝	⅞	6¼	12.3	3	27	7½	18	5	36	16
17	2¼	¾	5½	8.8	2½	21	6½	13	3¼	27	17
18	2⅛	11-16	5	7.6	2	18	5¾	11	2¾	21	18
19	1⅞	⅝	4¾	5.8	1½	15	5	8½	2¼	19	19
20	1⅝	½	4	4.1	1	13	4¾	6	1½	17	20
21	1⅜	7-16	3¼	2.83	¾	10					
22	1¼	⅜	2¾	2.13	½	9					
23	1⅛	5-16	2½	1.65		8					
24	1	9-32	2¼	1.38		7½					
25	⅞	¼	2	1.03		7					
26	¾	7-32	1¾	.81		6½					
27	⅝	3-16	1½	.56		6					

Wire Ropes for Inclined Planes, Coal Mines, &c., at factory prices.

JUDSON'S PATENT LATHE CHUCK.



Judson's Patent Lathe Chuck.

THE STRONGEST CHUCK MADE OF THE SAME SIZE AND WEIGHT.

CONSTRUCTED ON ENTIRELY NEW PRINCIPLES;

Each Jaw being independent in action, and so arranged that the pressure of the Screw toward the centre also presses the Jaw firmly against the face of the Chuck, holding the work more securely than any other Chuck now in use, with the same power expended on the screw.

These Chucks have been in constant use for over four years and given entire satisfaction.

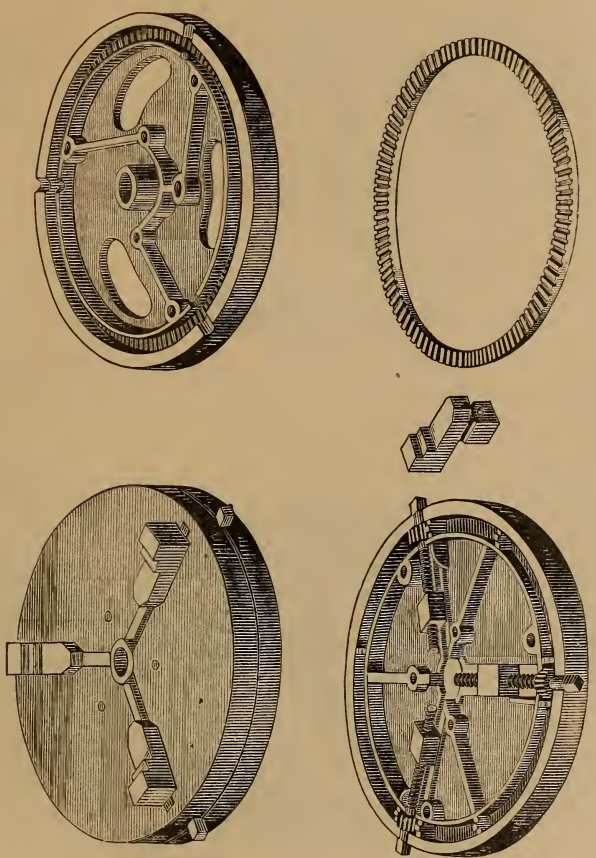
The Jaws and Screws are Cast Steel, and the Nuts of Malleable Iron. The workmanship is all first-class. The Casting is light, and yet with all necessary strength in the best position to resist the strain.

An examination of the Chuck by the practical mechanic will show at once the principle on which it is constructed, and carry its own recommendation.

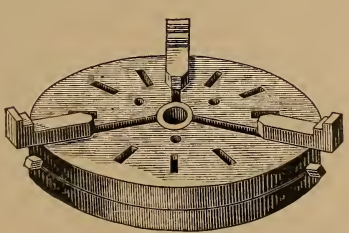
PRICES.

4½ inch,	$12 00
6 "	20 00
9 "	25 00
12 "	30 00
15 "	35 00
18 "	45 00
20 "	55 00
24 "	70 00
28 "	90 00
30 "	100 00

HORTON'S LATHE CHUCKS.

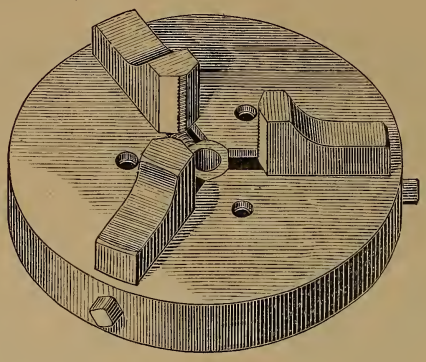


This Cut gives a view of HORTON'S PATENT LATHE CHUCK together and in its parts.

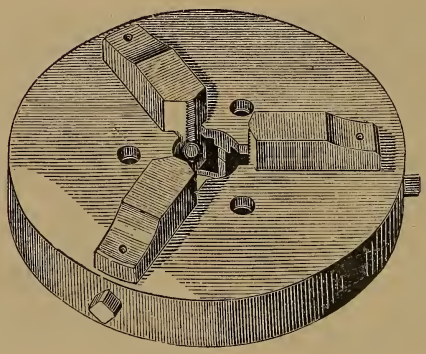


This Cut gives a view of all Chucks made over 12 inches in diameter.

No. 1, Reverse Jaw Chuck.



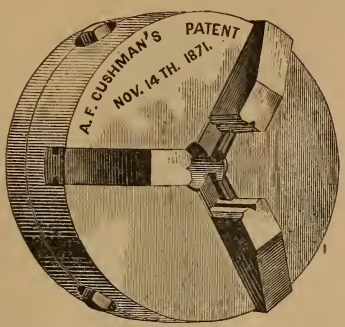
The 4, 6, 9, and 12 inch Chucks have this style Jaws.



The 6 inch Chuck. Jaws project ½ inch from face of Chuck.

3 JAWS.		4 JAWS.	
6 Inch Diameter and less,	$26 00	6 Inch Diameter,	$32 00
9 " "	34 00	9 " "	42 00
12 " "	44 00	12 " "	56 00
15 " "	52 00	15 " "	64 00
18 " "	62 00	18 " "	75 00
21 " "	80 00	24 " "	120 00
24 " "	100 00		
30 " "	170 00		
36 " "	230 00		
For Car Wheels,	250 00		

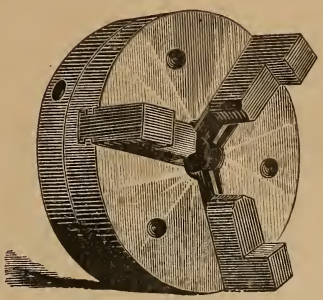
CUSHMAN'S PATENT CHUCKS.



PATENT GEARED SCROLL CHUCK.

INCLUDING KEY AND SCREWS.

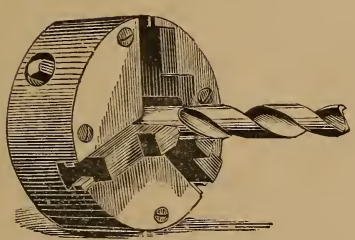
3	inch diameter,	$13 00
4	" "	16 00
5	" "	18 00
6	" "	20 00
9	" "	25 00



COMMON LEVER SCROLL CHUCK.

BOLTS AND SCREWS INCLUDED.

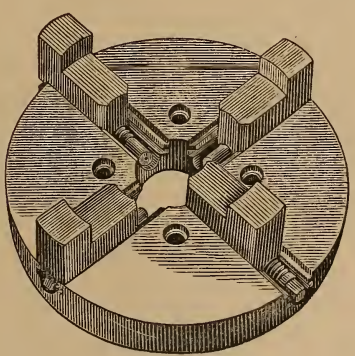
6	inch diameter,	$18 00
9	" "	24 00
12	" "	30 00
15	" "	36 00
18	" "	45 00
21	" "	60 00



GEARED CHUCK WITH REVERSE JAW.

KEY AND SCREWS INCLUDED.

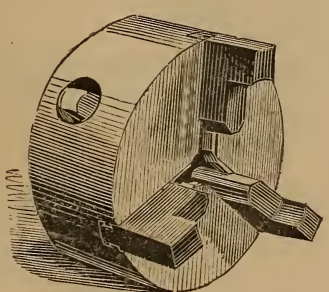
3	inch diameter,	$12 00
4	" "	15 00
5	" "	17 00
6	" "	20 00
9	" "	24 00



NEW IMPROVED INDEPENDENT FOUR JAW CHUCK.

INCLUDING BOLTS AND KEY.

9	inch diameter,	$30 00
12	" "	35 00
15	" "	42 00
20	" "	60 00
24	" "	75 00



GEARED SCROLL CHUCK.

INCLUDING KEY AND SCREWS.

3	inch diameter,	$12 00
4	" "	15 00
5	" "	17 00
6	" "	20 00
9	" "	24 00

IMPROVED LEVER SCROLL CHUCK.

With Set Screws in the Horn of the Jaw for truing up work and holding it extra tight.

INCLUDING BOLTS.

9	inch diameter,	$24 00
12	" "	30 00
15	" "	36 00
18	" "	45 00
21	" "	60 00

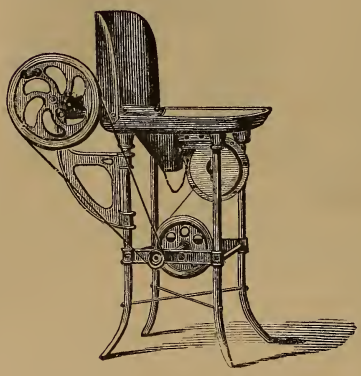
DOUBLE LEVER SCROLL CHUCK.

INLUDING LEVERS AND SCREWS.

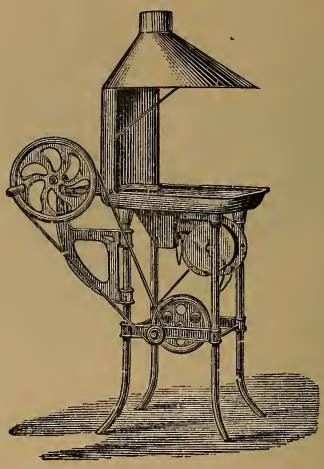
3	inch diameter,	$10 00
4	" "	12 00

Portable Forges, Nos. 1 & 2.

WITH WHEEL OR ROTARY MOVEMENT.



Forge No. 1, Price $27.00.

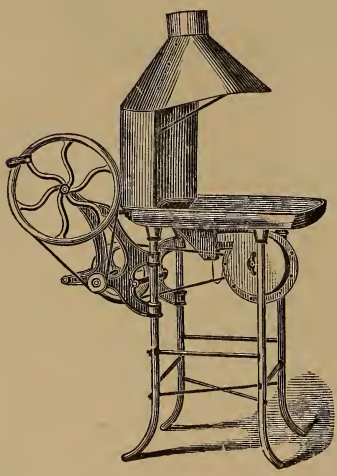


Forge No. 1, with Hood, Price $30.00.

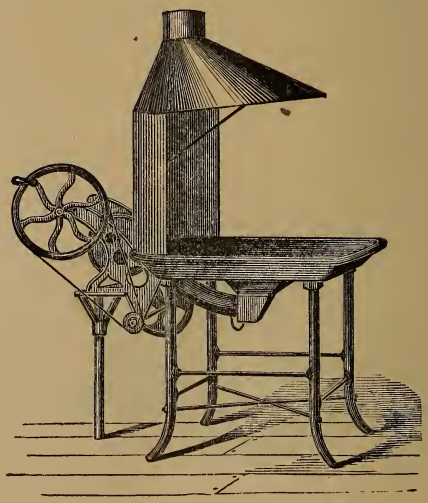
Forge No. 2 is same style as Forge No. 1, only larger size.

Portable Forge, Nos. $2\frac{1}{2}$ & 3.

WITH WHEEL OR ROTARY MOVEMENT.



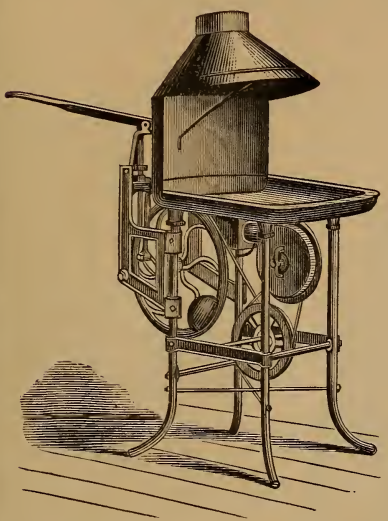
Forge No. $2\frac{1}{2}$, with Hood, Price $44.00.



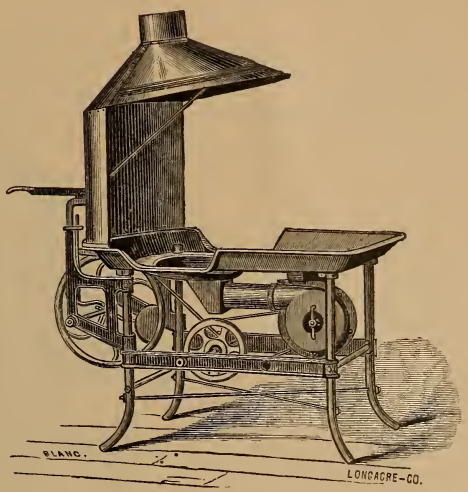
Forge No. 3, with Hood, Price $56.00.

This is the same in size and style as Forge No. 2, excepting the Gearing, which in Forge No. $2\frac{1}{2}$ is at the back of the Forge, the Shaft being so placed that Pulleys can be attached to run by power.

Portable Forges with Lever Movement.



Nos. 2½ & 3, with Lever and Hood, $56.00.



No. 4, with Lever and Hood, $78.00.

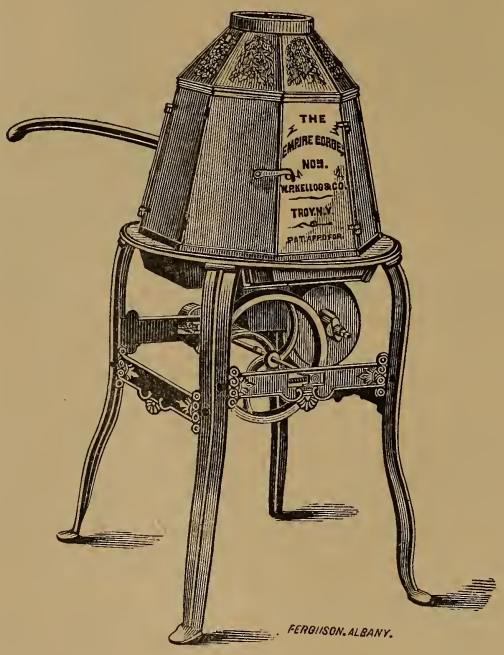
The Forges are worked by a Lever movement with an up and down stroke. The Lever is preferred by some to the Wheel or Rotary movement, as it enables the worker to stand farther from the fire, and allows more freedom of movement. The Lever on all our Lever Forges is less tiresome than that on an old-fashioned Bellows, and gives a steadier and more effective blast.

PRICES OF BLACKSMITHS' FORGES.

ROTARY.	Height.	Size of Fire-Pan.	Weight.	Diameter of Fan.	Price.
	Inches	Inches.	Lbs.	Inches.	
Forge No. 1,	30	17x20	85	6	$27 00
Forge No. 1, with Hood,	30	17x20	88	6	30 00
Forge No. 2,	30	20x24	98	8	35 00
Forge No. 2, with Hood,	30	20x24	104	8	40 00
Forge No. 2½,	25	21x27	130	8	44 00
Forge No. 2½, with Hood,	25	21x27	140	8	50 00
Forge No. 3,	25	24x30	140	9	50 00
Forge No. 3, with Hood,	25	24x30	150	9	56 00
LEVER.					
Forge No. 2½, with Lever,	25	21x27	140	8	50 00
Forge No. 2½, with Lever and Hood,	25	21x27	150	8	56 00
Forge No. 3, with Lever,	25	24x30	150	9	60 00
Forge No. 3, with Lever and Hood,	25	24x30	160	9	66 00
Forge No. 4,	25	30x40	185	9	70 00
Forge No. 4, with Hood,	25	30x40	200	9	78 00
POWER.					
Forge No. 2½, for Power, with Hood,	25	21x27	140	8	50 00
Forge No. 3, for Power, with Hood,	25	24x30	150	9	60 00
Forge No. 4, for Power, with Hood,	25	30x40	200	9	75 00
Forge No. 5, (oval)	22	36x54	550	9	145 00
Forge No. 6, (circular)	22	54x54	600	9	160 00

THE EMPIRE FORGE.

With Hood and Doors Complete.



"EMPIRE" FAN BLOWING PORTABLE FORGES FOR MACHINISTS, BLACKSMITHS, MINERS, &c.

No. 0, 7 inch Fan, for hand use,	. . . .	each, $35 00
No. 1, 7 " " "	. . . .	" 40 00
No. 2, 8 " " "	. . . .	" 50 00
No. 3, 8 " " "	. . . .	" 60 00

Arranged for Power, $5.00 additional.

ROOT'S PATENT IMPROVED PORTABLE FORGE.

No. 1,	Hearth,	14 inch.	Blast for	24 inch	Bellows,	$48 00
No. 2,	"	14 x 29	"	30 "	"	58 00
No. 3,	"	20 x 30	"	36 "	"	80 00
No. 4,	"	36 x 42	"	40 "	"	107 00

FOUNDRY FACINGS.

These Facings are prepared with the greatest care and cannot be excelled, and our prices will compare very favorably with any in the market. We therefore solicit your orders confident that a trial will give entire satisfaction.

BITUMINOUS FACING,

Made from Selected Lump Coal, from the Westmoreland Coal Co's Mines. This Coal is noted for its great yield as a Gas Coal; its percentage of Bitumen therefore being very large, makes it the best for Foundry purposes. It peels readily, and makes good castings.

Mix 1 to 8 or 9 of sand for Heavy Work, and 1 to 12 or 14 for light castings.

Price, per bbl., $3.00; per hhd., $14.00.

ANTHRACITE DUST, OR LEHIGH FACING,

Made from Pure, Washed Anthracite Coal, powdered with great care and bolted through fine silk cloth, making it of a uniform grade. For heavy work it cannot be excelled.

Price, in bbls., ... 1½ cts. per lb.

SOAPSTONE FACING,

Prepared from Selected Stone, pulverized very fine and bolted, making it equal to Black Lead. It is well adapted for Stove and Hollow Ware Foundries, and extensively used by them.

Price, per bbl., ... $4.50

GENUINE BLACK LEAD.

This Lead is the brand known as the Double Hammer German Lead, perfectly pure. It gives a beautiful finish to castings, and is much used as a facing and loam wash.

Price, in bbls., ... 6 cts. per lb.

CHARCOAL DUST,

Made from Selected Sappling Oak Charcoal, ground and bolted very fine. Used for dusting on over other facings, and for light work, such as Stove Plates, Ornamental Castings, &c.

Price, in bbls., ... 3½ cts. per lb.

CLARK'S PATENT RHODE ISLAND FACING, ... 3½ cts. per lb.

FOUNDRY FACINGS—Continued.

EXTRA STOVE PLATE FACING.

This Facing is especially intended for Stove Plates, Hollow Ware, and light work of all kinds, where "printing back" is necessary. It can be used alone, but a little Charcoal dusted on adds to the finish of the work. A trial will convince you of its superiority. We furnish it in bbls. or hhds., as may be most convenient.

Price, ... 3 cts. per lb.

No. 1 FACING, OR PATENT BLACKING.

This is used especially for light work. It cannot be excelled for thin plate castings, or where the iron is required to run out very thin. It gives a beautiful fine finish.

Price, in bbls., ... 3 cts. per lb.

No. 2 FACING.

Used for general work. Making an equally fine face on light or heavy work, such as Iron Railings, Columns, &c.

Price, in bbls., ... 3½ cts. per lb.

CEYLON PLUMBAGO, No. 1 DUST.

A very superior facing, used for fine work.

Price, in bbls., ... 9 cts. per lb.

FLOUR (For Cores.)

As the price of Foundry Flour fluctuates continually, we prefer not to fix any positive price, but will always furnish it at the lowest market figures. We can furnish Rye chops for coarse cores.

Price, ... 3½ cts. per lb.

COKE DUST.

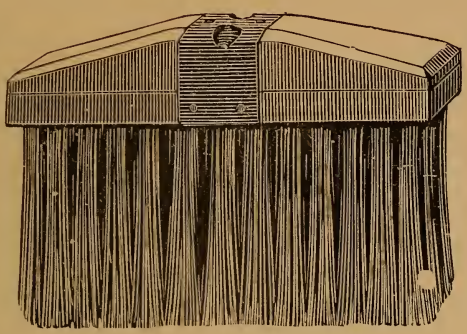
A very good facing for some classes of heavy work. It is also used in Steel works, and for Roofing purposes.

Price, in bbls., ... 1¾ cts. per lb.

Carbon Dust, ... 1½ cts. per lb.
Smut Blacking, (a heavy facing,) . . . 1¾ " "
Sea Coal, ... $2.00 per bbl.
Sour or Spoiled Molasses, . from 22 cts. to 27 cts. per gallon.

☞Special prices made for large quantities of any of the above Facings.

BRUSHES.



SWEEPING BROOM.

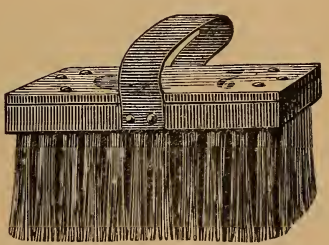
Head,	12 inch,	per dozen,	$14 00
"	13 "	"	15 00
"	14 "	"	16 00
"	15 "	"	18 00

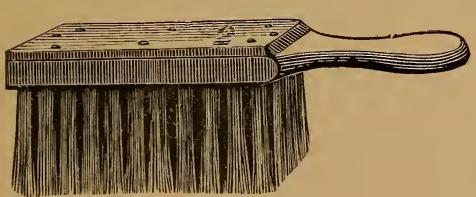
Brooms covered with Sheet Iron for Glass Works and Rolling Mills, $3.00 extra per doz.

CASTING BRUSH.

No. 1,	5 Rows,	2 in.	wire, per doz.,	$7 00
No. 2,	5 "	3 "	"	7 50
No. 3,	5 "	4 "	"	8 00
No. 4,	5 "	5 "	"	9 00

Iron Bound, 75 cents extra, per doz.





CASTING BRUSH,

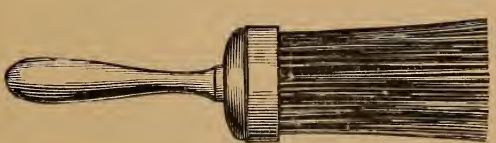
WITH HANDLE.

No. 1,	5 Rows,	2 inch,	per doz.,	$7 00
No. 2,	5 "	3 "	"	7 50
No. 3,	5 "	4 "	"	8 00
No. 4,	5 "	5 "	"	9 00

Iron bound, 75 cents extra, per doz.

FOUNDRY BRUSH.

No. 1,	3 inch,	per doz.,	$7 00
No. 2,	4 "	"	7 50
No. 3,	5 "	"	8 00



Patent Rubber-Cushioned Brush.

Per dozen,	$15 00
Refilled, per dozen,	9 00

Moulders' Tools.

SQUARE TROWELS.

1 x 4,	$0 50 each.
1¼ x 5,	75 "
1½ x 5½,	95 "
1¾ x 6,	1 15 "
2 x 6,	1 25 "

HEART TROWEL.

2 inches wide,	$0 50 each
2½ " "	75 "
3 " "	1 00 "

OVAL DOG TAIL.

1 inch wide,	65 cts. each.
1¼ " "	75 cts. "

SPOON SLICKS.

1¼ inch wide,	65 cts. each.
1½ " "	75 cts. "

TAPER ROUND POINT.

1 inch wide,	60 cts. each.
1¼ " "	70 cts. "
1½ " "	85 cts. "

FLANGE AND BEAD.

¾ inch wide,	$1 00 each

YANKEE.

½ inch wide,	50 cts. each.
⅝ " "	65 cts. "
1 " "	80 cts. "

FLAT AND CURVED FLANGE.

¾ inch wide,	$1 50 each.

BEAD SLICKS.

½ inch wide,	$0 75 each.
⅝ " "	1 00 "

DOUBLE SQUARE END.

½ inch wide,	50 cts. each.
⅝ " "	65 cts. "
1 " "	80 cts. "

HEART AND SQUARE.

1 inch wide,	$0 50 each.
1½ " "	75 "
2 " "	1 00 "

PIPE AND CORNER SLICKS.

Square Corner.	Pipe.	Hf. Rd. Corner.
2 in. 60 cts.	Any curve,	1 inch, . 50 cts.
2½ " 65 cts.	50 cents	1¼ " . 60 cts.
3 " 80 cts.	each.	1½ " . 65 cts.
		1¾ " . 70 cts.
		2 " . 75 cts.

LIFTERS.

¼ x 12 inches,	50 cts. each.
½ x 14 "	70 cts. "
⅝ x 16 "	90 cts. "
1 x 18 "	$1 00 "

FLANGE LIFTERS.

¾ x 16 inches,	$1 50 each.
⅞ x 18 "	1 65 "
1 x 20 "	1 75 "

SWABS.

Pure Flax,	$3 00 per doz.

CRUCIBLES.

Dixon's, Gautier's, } Price, per number, . .

MOULDERS' SHOVELS.

No. 1,	$15 00
No. 2.	18 00

FOUNDRY RIDDLES.

Iron, all Nos.,	$11 00 per doz.
Brass, No. 2 to 3,	24 00 "
Brass, No. 4 to 6,	20 00 "
Brass, No. 8 to 20,	18 00 "
Galvanized, No. 1 to 6,	14 00 "
Parting Sand Riddles (Iron or Brass, from No. 15 to 40),	$10 to $20 "
Coal Screens, (heavy made)	$9 and $10 each.
Heavy Screen Bottoms, per square foot,	30 cents.
Light Wire Work,	" " " 20 "
Foundry Sifting Machine, (saves labor and time),	$27 00

The above Riddles are made expressly for foundry use.

MOULDERS' BELLOWS.

10 inch,	$1 25 each.
11 "	1 50 "
12 "	2 00 "
13 "	2 25 "
14 "	2 50 "
15 "	3 00 "
16 "	4 00 "

FOUNDRY BRUSHES,

WITH OR WITHOUT HANDLES.

No. 1,	$3 50 per doz.
No. 2,	3 75 "
No. 3,	4 50 "
No. 4,	5 50 "
No. 5,	6 75 "
No. 6,	8 00 "

HARD DUSTERS,

WITH OR WITHOUT HANDLES.

No. 1,	$3 50 per doz.
No. 2,	4 00 "
No. 3,	4 50 "
No. 4,	5 00 "
No. 5,	6 00 "
No. 6,	7 50 "

CORE BRUSHES.

Varnish Brushes (1 to 5 inches), per inch 20 cts.

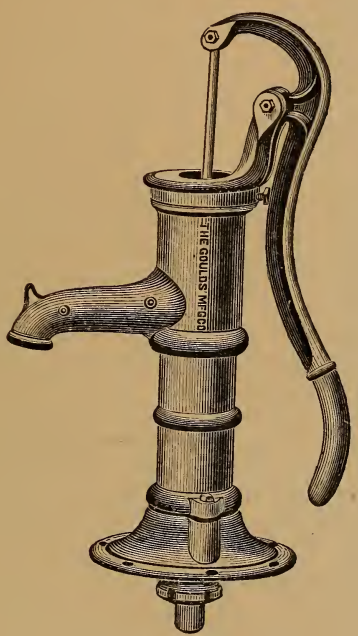
White Wash Brushes, { 7 Knot, $4 50 per doz. / 8 " 5 00 " / 9 " 5 75 "

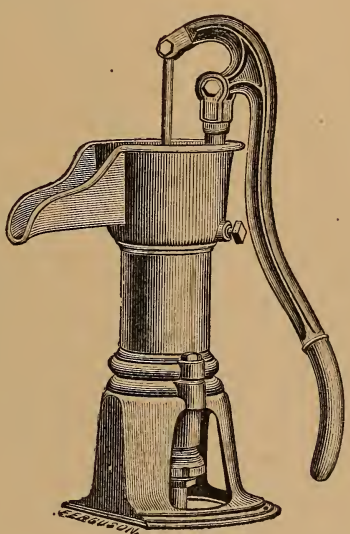
Ferrule Brushes, (3 and 4 fer.) per fer., 40 cents.

IRON CISTERN PUMPS.

ON BASE WITH IRON VALVE SEAT, AND COUPLINGS BELOW.

ALL PUMPS FITTED FOR LEAD OR IRON PIPE.





SIZES AND PRICES.

	Iron.	Brass.
No. 0, 2¼ inch calibre, suitable for Pipe 1 inch calibre, each	$3 50	
No. 1, 2½ inch calibre, suitable for Pipe 1 inch calibre, each	4 00	$6 00
No. 2, 2¾ inch calibre, suitable for Pipe 1¼ inch calibre, each	4 50	7 00
No. 3, 3 inch calibre, suitable for Pipe 1¼ or 1½ inch calibre, each,	5 00	8 00
No. 4, 3¼ inch calibre, suitable for Pipe 1¼ or 1½ inch calibre, each.	5 50	10 00
No. 5, 3½ inch calibre, suitable for Pipe, 1¼ or 1½ inch calibre, each,	6 50	
No. 6, 3¾ inch calibre, suitable for Pipe 1½ or 2 inch calibre, each...	8 00	

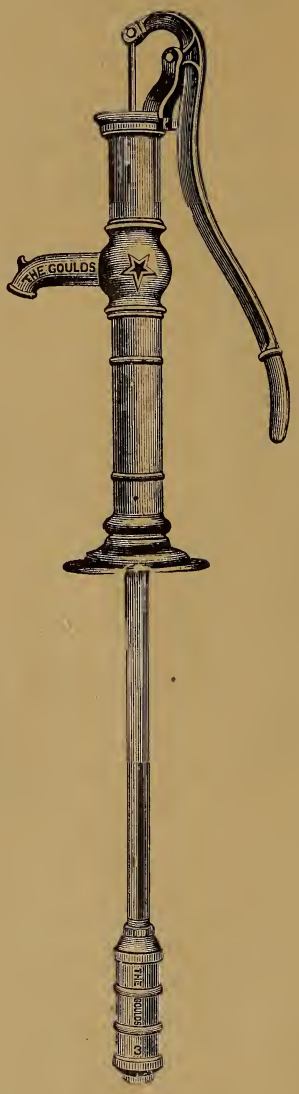
SIZES AND PRICES.

No. 1, 2½ inch calibre, suitable for Pipe 1¼ inch calibre, each	$4 25
No. 2, 3 inch calibre, suitable for Pipe 1¼ inch calibre, each	4 75
No. 3, 3½ inch calibre, suitable for Pipe 1¼ inch calibre, each	5 25
No. 4, 4 inch calibre, suitable for Pipe 1¼ inch calibre, each	5 75
No. 5, 4½ inch calibre, suitable for Pipe 1¼ or 1½ inch calibre, each.	6 25

Stroke, four inches each size.

STAR WELL PUMP.

Anti-Freezing, with Wrought Iron Connecting Pipe—Patent Sand Valve.

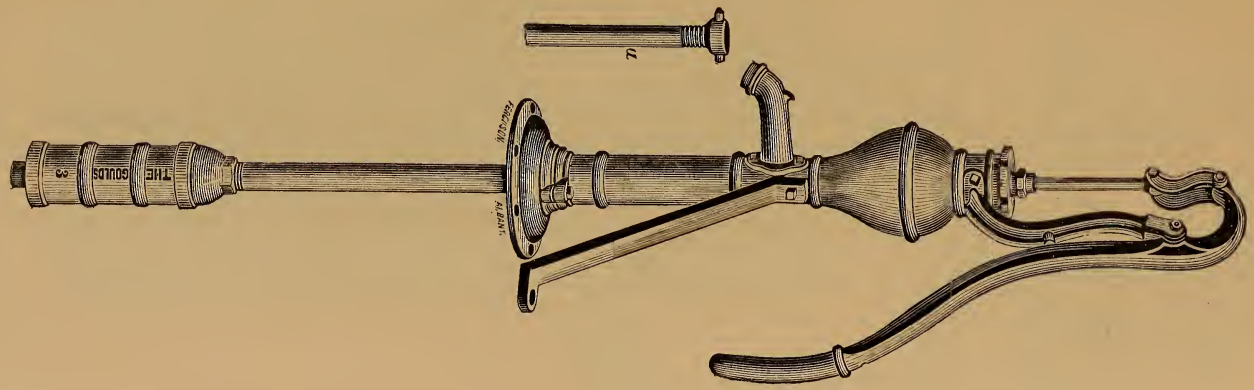


SIZES AND PRICES.

No. 1, 2¼	inch	bore,	for	1	inch	suction pipe,	$7 00
No. 2, 2½	"	"		1¼	"	"	7 50
No. 3, 2¾	"	"		1¼	"	"	8 00
No. 4, 3	"	"		1¼	"	"	8 50
No. 5, 3¼	"	"		1¼	"	"	9 00

NEW TUBE WELL FORCE PUMP.

Anti-Freezing, with 3 Feet Wrought Iron Connecting Pipe—Patent Sand Valve.

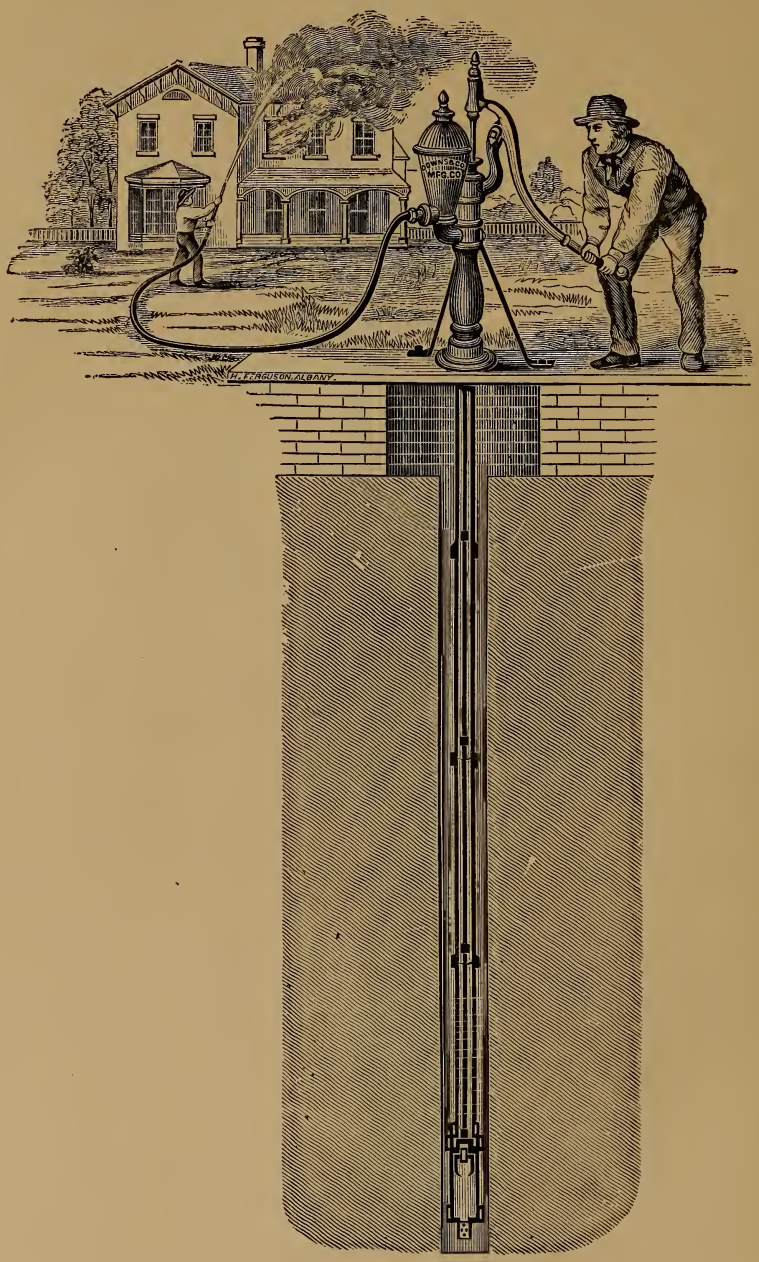


SIZES AND PRICES.

No. 3,	2¾	inch	bore, for	1¼	inch	suction pipe, ... $15 00
No. 4,	3	"	"	1¼	"	" 15 00
No. 5,	3¼	"	"	1¼	"	" 16 00

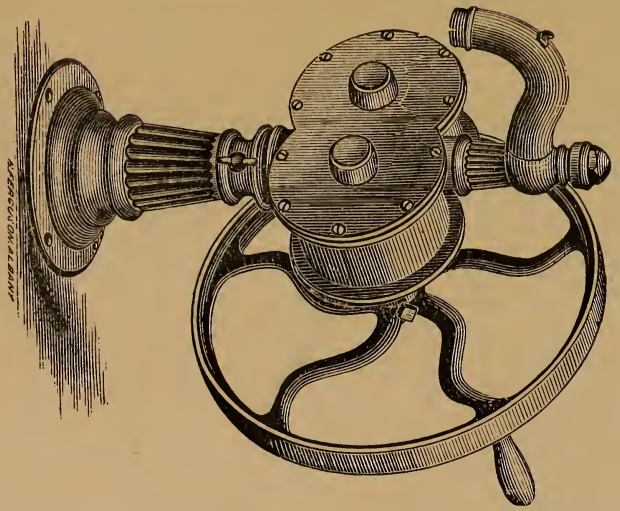
CHARLES REUTER. J. D. MALLORY.

Deep Well Force Pump.



STANDARD AND CYLINDER, SIZES AND PRICES.

Standard with	No 0,	$2\frac{1}{2}$	inch cylinder,	$19 00	Standard with	No. 4, 4 inch cylinder,	$22 00
" "	No. 1,	$2\frac{3}{4}$	"	19 00	" "	3 in. Double-Acting "	25 00
" "	No. 2,	$3\frac{1}{4}$	"	20 00	" "	4 in. " " "	27 00
" "	No. 3,	$3\frac{3}{4}$	"	21 00	Length of stroke 6 inches.		



HAND ROTARY FORCE PUMPS.

SIZES AND PRICES.

				Iron.	Bronze.
No 1,	1¼ inch	suction,	1 inch discharge,	$22 00	$45 00
No. 2,	1¼	"	1 "	25 00	50 00
No. 3,	1½	"	1¼ "	29 00	55 00
No. 4,	1½	"	1½ "	38 00	70 00
No. 5,	2	"	2 "	44 00	80 00

No. 1	will discharge	10	gallons per minute,	with 60	revolutions.
No. 2	"	13	"	" 60	"
No. 3	"	15	"	" 60	"
No. 4	"	25	"	" 60	"
No. 5	"	30	"	" 60	"

Sizes Nos. 4 and 5 were built in response to the frequent demands for a Pump of large capacity for hand power, for disposing of the accumulated water in coal and ore mines, particularly in the former where it is, many times, not possible to transmit power to a Pump, the shaft is of ample length to receive another balance wheel at the other end and the iron handles long enough to admit two or four men working on them at once.

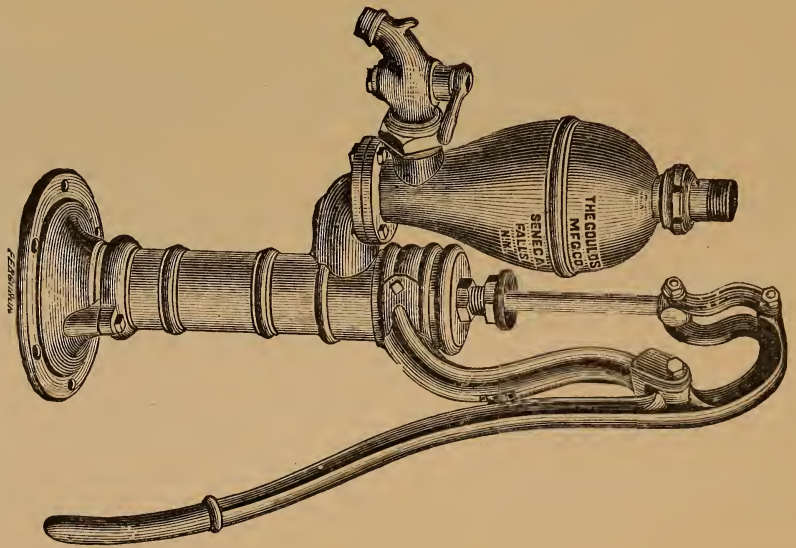
Iron Force Pump on Base, with Cock.

With Revolving Brake, Air Chamber and Brass Piston Rod.

SIZES AND PRICES.

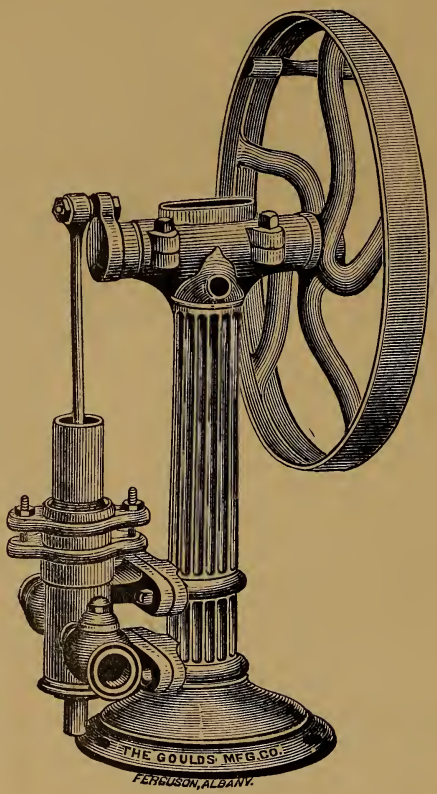
No. 2,	2½ in.	calibre,	suitable for pipe	1¼ in.	calibre, ... $12 50
No. 10,	3 "	"	"	1¼ "	. . . . . 14 50

Length of Stroke 6 inches.



STEAM BOILER FEED PUMP.

WITH COLUMN AND SINGLE PULLEY, FOR HAND OR POWER.

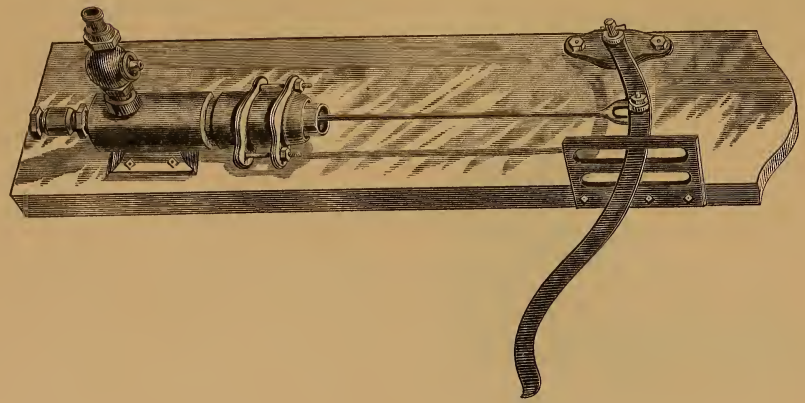


Steam Boiler Feed Pump on bed plate, with column, crank shaft, face plate, and single pulley with iron handle for hand or power use. One of the chief advantages of this style of Pump is the ease with which it can be fastened to its place on the floor. The Pump and column being perfectly in line with each other — only the bed plate requires leveling.

This Pump will feed boilers under any steam pressure. We always recommend the shortest possible suction pipe to a feed Pump, as there is not so much danger of its losing its priming

SIZES AND PRICES.

													Price with loose pulley.
No. 11,	2	in. diam.,	3	in. stroke,	1	in. suc. & dis.,	16	in. diam. pulley,	4	in. face,	$32	00	$36 00
No. 12,	2½	"	3	"	1	" "	18	" "	4	"	40	00	44 00
No. 13,	3	"	3	"	1¼	" "	20	" "	4	"	50	00	55 00
No. 14,	2	"	6	"	1¼	" "	20	" "	4	"	65	00	70 00
No. 15,	2½	"	6	"	1½	" "	22	" "	4	"	75	00	80 00
No. 16,	3	"	6	"	1½	" "	22	" "	4	"	80	00	90 00



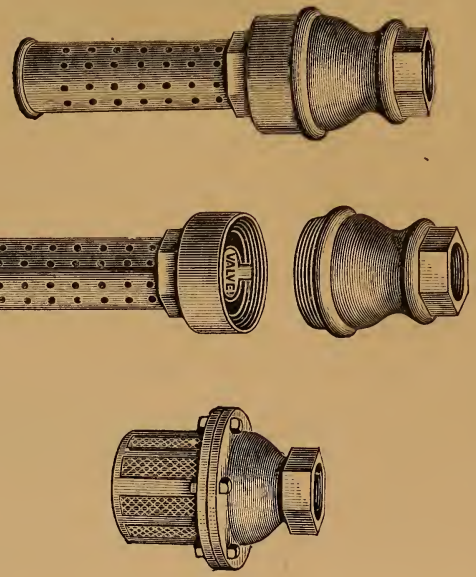
BOILER FEED PUMPS

ON PLANK.

RIGHT OR LEFT HAND.

SIZES AND PRICES.

No.	0,	2	inch bore for	1	inch pipes, ... $12 00
No.	00,	2½	" "	¼	" 14 00
No.	000,	2	" "	1¼	" 16 00

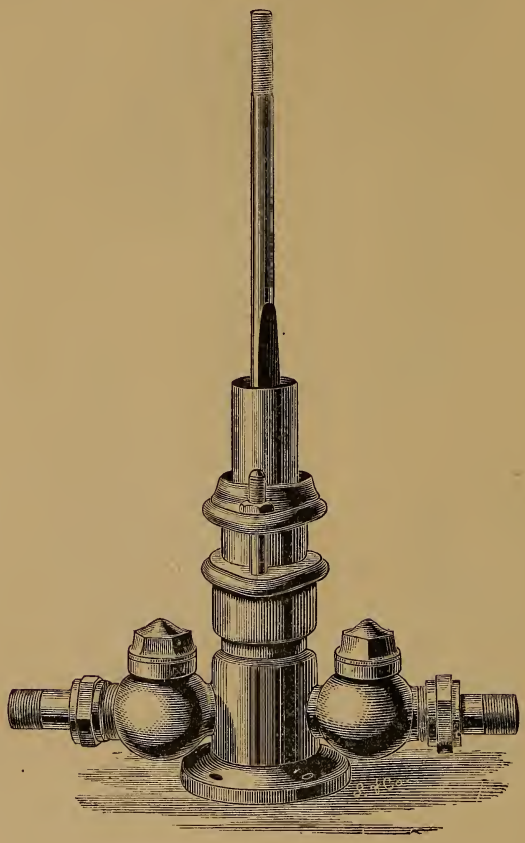


FOOT VALVES AND STRAINERS.

Size, . . .	1	1¼	1½	2	2½	3	4
Screwed Ends,	$2 50	3 00	4 00	5 40	7 15	9 00	
Flanged "				7 00	9 20	11 25	17 00

BOILER FORCE PUMP.

FOR POWER.



SIZES AND PRICES.

Diameter of Piston,	1¼	inch,	Length of Stroke,	6	inch,	Price,	$10	00
"	"	1½	"	"	6	"	"	15	00
"	"	2	"	"	6	"	"	22	00
"	"	2½	"	"	6	"	"	30	00
"	"	3	"	"	6	"	"	40	00
"	"	4	"	"	10	"	"	60	00
"	"	5	"	"	10	"	"	90	00

We make them with Brass Plunger when used for pumping hot water, at an additional cost of material only.

OILS.

	Dolls. Cts.
SPERM OIL,	Per gall.
LARD "	"
ENGINE "	"
PARAFINE OIL,	"
NATURAL "	"
TALLOW "	"
SIGNAL "	"
SPINDLE "	"

	Dolls. Cts.
No. 1 MACHINERY,	Per gall.
No. 2 "	"
WEST VIRGINIA—	
28° Gravity,	"
29° "	"
30° "	"
31° "	"
FISH OIL,	"
DRILLING OIL,	"

OILERS.

	Per Doz.
Patent Malleable Iron Oiler, with patent elliptic steel spring,	$7.50

OLMSTEAD'S IMPROVED OILERS.

BRASS AND COPPER OILERS.

No. 00, Extra size, for Engineers, straight or bent tubes,	$12.00
No. 0, For Engineers,	9.00
No. 1, Same size as No. 1 Tin, for Machinists, etc.,	8.00
No. 2, For Sewing Machines, " " "	7.00
No. 3, " " " etc.,	5.00

TIN OILERS.

No. 0, Long Bent Spout,	4.25
No. 0, For Engineers, etc.,	4.00
No. 1, Machinists' size,	3.60
No. 2, " " etc.,	3.00
No. 3, Sewing Machine size,	2.40

ZINC OILERS, WITH DRIP CUPS, SAME AS BRASS.

No. 00, Extra Size, straight or bent tubes,	7.50
No. 0, For Engineers, etc.,	5.00
No. 1, For Machinists, etc.,	4.25
No. 2, For Sewing Machines, etc.,	3.50

OIL FILLERS.

Copper or Brass, tin bottom, 1 pint,	12.00
" " " " 1½ "	14.00
" " " " 2 "	16.00
Copper, brass bottom, 1 "	14.00
" " " 1½ "	16.00
" " " 2 "	18 00

Long Tubes, $2.00 more per dozen.

Engineers' Sets, Fancy Cans and Fillers, with Drainers, 3 pcs.,	12.00
" " " " " " " " 5 "	16.00

GLASS LUBRICATORS

FOR ENGINES AND SHAFTING.

Endorsed by all the leading mechanics of the age. Warranted to give entire satisfaction.

TIN LANTERNS.

No. 0	Sun Lantern, (kerosene)	per doz. $10 00
" 1	Little Giant, (with heater,	" 13 00
" 2	Railway King,	" 8 50
" 4	Oil and Candle,	" 9 50
" 5	Double Guard Railroad,	" 10 00
" 6	" " "	" 10 50
" 8	Open Tops,	" 6 50
" 11	Little Giant,	" 11 00
" 12	Same as No. 6, with heater,	" 13 00
" 15	Candle only,	" 4 50
" 16	Ruby Railroad,	" 25 00
" 17	Green "	" 23 00
" 18	Blue "	" 23 00
" 19	Ruby Railway King,	" 20 00
" 27	Single Guard and Sangster Spring Lamp Pot,	" 8 50
" 38	Open Top Lanterns,	" 10 50
" 39	" " "	" 10 50
" 40	Open Top Ruby Lanterns,	" 22 00
" 41	" " Blue "	" 20 00
" 42	" " Green "	" 20 00
" 43	Open Top White Lanterns,	" 9 50
" 44	Little Giant, Ruby "	" 22 00
" 45	Open Top Blue, "	" 20 00
" 46	" " Green, "	" 20 00
White Globes for any above,		per doz. $2 00 to 3 00
Ruby " " "		" 6 00 to 9 00
Blue or Green " "		" 4 50 to 6 00

Station Lamps, Switch Lamps, Tail Lamps.

WESTLAKE'S LOOSE GLOBE LANTERNS.

CONDUCTORS' FANCY LANTERNS.

	Brass.	German Silver.	Plated Silver or Nickel.
New York Belle, each	$4 25	6 00	6 00
Conductors' Pet "	5 00	7 00	7 00
" Gem "	5 50	8 00	8 00
" Reflector, each	5 75	9 00	8 00
Railway Queen, each	6 00	8 00	8 00

Marked to order when required.

EMERY.

We keep in stock a full assortment of the following brands and numbers: CHESTER, WASHINGTON MILLS, WELLINGTON MILLS. Numbers 6, 8, 10, 12, 14, 16, 20, 24, 30, 36, 46, 54, 60, 70, 80, 90, 100, 120, 150, Flour, and Crocus.

Put up in kegs of about 200 lbs.—Flour, regular Nos., per lb.,

	CHESTER.	WASHINGTON.	WELLINGTON.
" packages of 10 lbs.,	——	——	——

EMERY PAPER, CLOTH, ETC.

Emery Paper, No. 00 to 1½,	$7 00 per ream.
" " No. 2,	8 00 "
" " No. 2½,	10 00 "
" " No. 3,	12 00 "
Flint Paper, No. 00 to 1½,	4 50 "
" " No. 2, 2½, and 3,	5 00 "
Star Paper, all numbers,	3 50 "
Emery Cloth, No. 00 to 1½,	20 00 "
" " No. 2,	22 00 "
" " No. 2½,	26 00 "
" " No. 3,	28 00 "
Roll Extra Flint Paper, in 50-yard rolls, No. 00 to 2,	10c. per yard.
" " " " No. 2½,	11c. "
" " " " No. 3,	12c. "

ROTTEN-STONE.

Soft English, ... per lb., cts.

PUMICE-STONE.

Selected, . . . per lb., Powdered, . . . per lb., cts.

GUM SHELLAC.

For pattern makers, ... per lb., cts.

GLUE.

White, . . . per lb., Sheet, ... per lb.,

PATENT POLISHING OIL.

For brass-work, ... per gall.,

GROUND GLASS.

For grinding Valves, ... per lb.,

DRY RED LEAD.

Per lb.

PLUMBAGO.

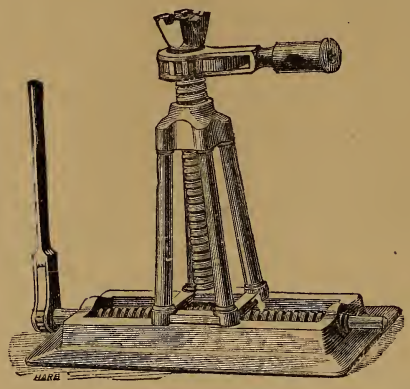
Dixon's Pure, ... per lb.

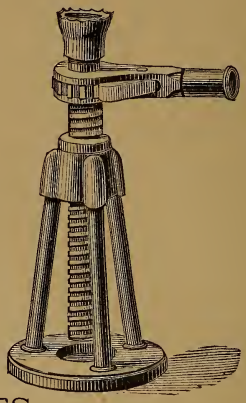
BORAX.

By the Barrel, . per lb., Less than a Barrel, . per lb.,

By the quantity in Barrels or Boxes, ... @ per lb.,

Screw Lifting and Carrying Jacks.





SIZES AND PRICES.

Lifting and Carrying Jacks, ...	$250 00 per pair.
Lifting Jacks, 18 inch, ...	90 00 "
" " 24 "	115 00 "
" " 30 "	135 00 "
" " 36 "	145 00 "

They have a large Screw and Double Ratchet Lever. Made with best wrought iron, machine cut square thread screws, and best workmanship and material throughout.

Wrought Iron Lifting Jacks.

FOR RAILWAY CARS, &c., HAVING LARGE SCREW AND RATCHET LEVER.

PRICES.

18 inch, $75.00. 24 inch, $100.00. 36 inch, $140.00 per pair.

TRAVERSING SCREW JACKS.

Lift 12 tons, traverse 12 inches, . . . $180 00 per pair.

RAILWAY FOG SIGNALS.

Water-proof, Treble Capped, ...	$12 00 per gross.
" " " with Patent Clips, (prevents them being brushed from the track,) . . .	20 00 "

MINERS' SAFETY LAMP.

BEST ENGLISH MAKE.

Fireman's Lamp, No. 10, ...	$48 00 per doz.
Common Clanney, ...	66 00 "
New Castle, (Improved Lock)	48 00 "
Best Clanney, ...	75 00 "

JACK SCREWS.

BELL BOTTOM.

1¼	inches in diameter,	Iron Barrel	6	inches long,	. . . .	$3 50
1¼	"	"	8	"	. . . .	4 00
1½	"	"	6	"	. . . .	4 00
1½	"	"	8	"	. . . .	4 75
1½	"	"	10	"	. . . .	5 00
1½	"	"	12	"	. . . .	5 50
1¾	"	"	6	"	. . . .	4 50
1¾	"	"	8	"	. . . .	5 00
1¾	"	"	10	"	. . . .	5 50
1¾	"	"	12	"	. . . .	6 00
1¾	"	"	14	"	. . . .	6 50
1¾	"	"	16	"	. . . .	8 00
2	"	"	6	"	. . . .	5 50
2	"	"	8	"	. . . .	5 75
2	"	"	10	"	. . . .	6 50
2	"	"	12	"	. . . .	7 75
2	"	"	14	"	. . . .	8 00
2	"	"	16	"	. . . .	9 50
2	"	"	20	"	. . . .	10 50
2	"	"	24	"	. . . .	13 50
2¼	"	"	8	"	. . . .	8 75
2¼	"	"	10	"	. . . .	9 50
2¼	"	"	12	"	. . . .	10 00
2¼	"	"	14	"	. . . .	10 50
2¼	"	Locomotive,	16	"	. . . .	12 00
2¼	"	"	20	"	. . . .	13 50
2¼	"	"	24	"	. . . .	16 00
2½	"	"	8	"	. . . .	10 00
2½	"	"	10	"	. . . .	10 75
2½	"	"	12	"	. . . .	11 50
2½	"	"	14	"	. . . .	12 00
2½	"	"	16	"	. . . .	12 75
2½	"	"	20	"	. . . .	14 75
2½	"	"	24	"	. . . .	17 50

Handles Extra.

SHOVELS AND SCOOPS.

AMES' CAST STEEL EDGE PLATED SHOVELS.

BLACK.

	No. 1	No. 2	No. 3	No. 4
D. Handle, Plain Back, Square Point, per doz.,	.....	15 00	15 50	16 50
" " " " Round " "	.....	15 50	16 00	17 00
Long " " " " " "	.....	15 00	15 50	16 50
D. " Strap " Square " "	.....	15 50	16 00	17 00

CAST STEEL SHOVELS.

	No. 1	No. 2	No. 3	No. 4
D. Handle, Strap Back, Square Point, per doz.,	.....	15 50	16 50	17 50
" " " " Round " "	.....	16 50	17 50	18 50
Shaw's Pat. Shovel and Tamping Bar, "	.....	18 00	.....	.....

LEHIGH CAST STEEL.

	No. 1	No. 2	No. 3	No. 4
D. Handle, Strap Back, Square Point, per doz.,	.....	13 75	15 10	16 25
" " " " Round " "	.....	14 50	15 10	16 25

ROWLAND'S CAST STEEL.

	No. 1	No. 2	No. 3	No. 4
D, Handle, Plain Back, Square Point, per doz.,	.....	13 50	14 00	15 00
" " " " Round " "	.....	13 50	14 00	15 00

SCOOP SHOVELS.

LONG OR SHORT HANDLES.

	No. 1	No. 2	No. 3	No. 4
Ames' Cast Steel Polished, ...	.....	18 00	19 00	20 00
Rowland, ...	.....	15 00	16 00	17 00

RAILROAD PICKS, &c.

WASHOE RAILROAD PICKS.

PRICES.

No. 1, 23 inches long, weighs 4½ lbs., per doz.,	$14 00
2, 25 " " " 5 " "	15 00
3, 27 " " " 6 " "	16 00
4, 29 " " " 6½ " "	17 00
5, 31 " " " 7½ " "	18 00

RAILROAD PICKS.—Axe Finish.

PRICES.

Weighing 4 to 5 lbs., per doz.,	$15 00
" 4½ to 5½, 5 to 6 lbs., per doz.,	15 50
" 5½ to 6½, 6 to 7 " "	16 00

RAILROAD PICKS.—Common.

PRICES.

Weighing 5 to 6 lbs., per doz.,	$11 50
" 7 to 7½ lbs., "	12 00

RAILROAD TAMPING PICK.

No. 1, Weighing 5 to 7 lbs. each, per doz.,	$15 00
2, " 5 to 7 lbs. " "	18 00

PICK POLLS.

For Railroad Companies' use, furnished at 12 cents per lb.

RAIL TONGS.

Cast Steel Jaws, each,	$3 50

COAL MINERS' PICKS.

CAST STEEL, POLISHED POINTS.

No. 1, per doz.	$10 00
2, "	10 50
3, "	11 00
4, "	12 00

MASONS' HAMMERS.

Cast Steel Head and Edge, per lb.,	18 cents.
Solid Cast Steel, "	35 "

RAILROAD SPIKE MAULS.

Cast Steel Face, 5 to 8 lbs., per lb.,	18 cents.
Solid Cast Steel, "	35 "

COAL SLEDGES.

Cast Steel Face, 5 to 9 lbs., per lb.,	18 cents.
Solid Cast Steel, 5 to 9 " "	35 "

STONE SLEDGES.

Cast Steel Face and Pene, 8 to 40 lbs., per lb.,	16 cents.
" Solid, 8 to 40 lbs., "	34 "

STONE HAMMERS.

Double Face, Cast Steel, plated, per lb.,	18 cents.
" " " " solid, "	35 "
" Edge, " " plated, "	18 "
" " " " solid, "	35 "

STRIKING HAMMERS.

Cast Steel Face, 6 to 25 lbs., per lb.,	18 cents.
" " " 2 to 5 " "	20 "
" " Solid, 6 to 25 " "	35 "
" " " 2 to 5 " "	38 "

FOG SIGNALS OR TRACK TORPEDOES.

These articles are manufactured expressly for our own railroad trade, and we can warrant them with entire confidence as superior to any in the market.

By the Cask of about 20 Gross each,	$13 00 per gross.
Discount.	
In smaller quantities,	$13 00 per gross.

NAPPING HAMMERS.

Cast Steel Face, 6 to 15 lbs., per lb.,	18 cents.
" " " 2 to 5 " "	20 "
" " Solid 6 to 15 " "	35 "
" " " 2 to 5 " "	38 "

FROGS.

MORRIS & WARD'S IMPROVED STEEL RAIL.

No. 1, 8 feet, (any angle,)	$110 00
2, 7½, 6 inches, (any angle,)	100 00
3, 7 inch, "	100 00
4, "	95 00
5, 6 inch, "	95 00
6, 5 and 6 inches, "	85 00

Any other lengths in proportion.

HAND CARS.

No. 1, Double Frame Car,	$70 00
2, " " "	65 00
3, with Plate Wheels,	75 00
1, Single Frame,	70 00
2, " "	65 00
3, Wrought Spoke Wheels,	65 00
Telegraph Car, Brass Gearing,	100 00
Four Wheel, Patent Ratchet Crank,	90 00
Three Wheel " " "	80 00
No. 1, Rubble Car,	50 00
2, " " Light,	45 00
3, " " "	40 00
1, Iron Lorey,	100 00
2, " "	75 00

LOCOMOTIVE HEAD-LIGHTS.

Buffalo Steam Gauge Co.'s 23 inch Reflector,	each $75 00
Williams' " " "	75 00
Kelley's " " "	75 00
Hall's " " "	75 00
Radley & McAllister Mfg. Co. " " "	75 00
Westlake's Patent " " "	

LOCOMOTIVE GONGS.

6 inch Bell,	each $3 00
7 " "	4 00
8 " "	5 00
9 " "	6 00

SAFETY VALVES.—Prescott's.

PRICES.

1½ inch,	$25 00
2 "	35 00
3 "	45 00
4 "	55 00

3 inch is the Size for Locomotives.

RICHARDSON'S

Locomotive,	$65 00

CIRCULAR SAWS.

Warranted Extra Cast Steel, Patent Ground.

Diameter.	Thickness.	Price each.	Each additional Gauge.	Extra for Grinding each addit'l Gauge.
4 inches,	19 gauge.	$ 0 85	$ 0 06 extra.	
5 "	19 "	1 00	0 07 "	
6 "	18 "	1 25	0 09 "	
7 "	18 "	1 50	0 10 "	
8 "	18 "	1 75	0 11 "	
9 "	17 "	2 25	0 14 "	
10 "	16 "	2 75	0 16 "	
12 "	15 "	3 50	0 20 "	$0 50
14 "	14 "	4 00	0 24 "	0 60
16 "	14 "	4 75	0 28 "	0 70
18 "	13 "	5 50	0 34 "	0 80
20 "	13 "	7 00	0 40 "	0 90
22 "	12 "	8 00	0 48 "	1 00
24 "	11 "	10 00	0 55 "	1 20
26 "	11 "	12 00	0 65 "	1 40
28 "	10 "	14 00	0 80 "	1 60
30 "	10 "	16 00	0 90 "	1 80
32 "	10 "	18 50	1 00 "	2 00
34 "	9 "	21 00	1 20 "	2 20
36 "	9 "	24 00	1 40 "	2 40
38 "	8 "	28 00	1 75 "	2 60
40 "	8 "	33 00	2 00 "	3 00
42 "	8 "	40 00	2 50 "	3 50
44 "	7 "	48 00	3 00 "	3 70
46 "	6 "	56 00	3 50 "	3 80
48 "	6 "	65 00	4 25 "	4 00
50 "	6 "	75 00	5 00 "	4 20
52 "	5 "	90 00	5 75 "	4 30
54 "	5 "	105 00	7 00 "	4 50
56 "	5 "	125 00	8 75 "	4 70
58 "	5 "	150 00	10 00 "	4 80
60 "	5 "	175 00	12 00 "	5 00
62 "	4 "	200 00	14 00 "	5 20
64 "	4 "	230 00	16 00 "	5 40
66 "	4 "	265 00	18 00 "	5 50
68 "	4 "	300 00	20 00 "	5 70
70 "	3 "	340 00	22 00 "	5 90
72 "	3 "	380 00	24 00 "	6 00

Circular Saws to cut Metal or Ivory, double price.

Concave Circular Saws, 50 per cent. advance on regular List.

STEAM PACKING.

SOAPSTONE PACKING.

Miller's Patent, consisting of a cotton covering and an interior of pulverized soapstone, ... 35 cts. per lb.

TUCK'S ORIGINAL.

Consisting of cotton duck rolled about a rubber core, . . 80 cts. per lb.
Or simply canvas rolled, ... "

EAGLE PACKING.

Hemp or jute covering a composition of tallow and plumbago, 60 cts. per lb.

SELDEN'S PATENT PACKING.

Consisting of prepared paper rolled about a rubber core, . 75 cts. per lb
" " " " " paper core, . "

YOUNG'S PATENT METALLIC PACKING.

Consisting of a composition of jute, tallow, etc., with a wire covering, ... cts. per lb.
Empire Packing, ... 1 50 per lb.

MARTIN'S PATENT PACKING RINGS.

Furnished only on orders, when exact dimensions must be given cts. per lb.
Italian *hemp packing*, ... 35 cts. per lb.

BABBITT METALS.

We would call the especial attention of M. M. and Machinists generally to our celebrated

ALLEN'S BLACK COMPOUND,

which is superior to any Babbitt in the market. It is nicely done up in boxes of 100 lbs. each. Price 25 cts. per lb.

CHEAPER GRADES OF BABBITT METAL.

No. A, ...	20 cts. per lb.
B, ...	15 "
C, ...	14 "

WASTE.

In bales of about four hundred pounds. We also have, for the convenience of our customers, small bales of one hundred pounds, put up expressly for us.

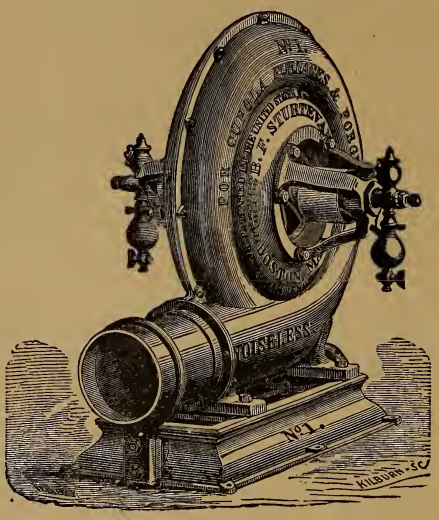
No. 1, Cop, ...	13 cts. per lb.
1, Machined, new, ...	14 "
2, " washed, ...	13 "
1, Colored, ...	10 "
2, "	9 "
Wool Waste, ...	"

B. F. STURTEVANT

PATENT IMPROVED

PRESSURE BLOWER,

For Cupola Furnaces and Forges.



PRICE LIST.

Number or size of Blower.	Prices of Blower without C Shaft and Pulleys.	Diameter of Pulleys on Blower.	Diameter of Outlet of Blower, outside measurement.
00	$ 25 00	2¼	3⅝
0	35 00	2⅝	4¼
1	45 00	3	4⅝
2	65 00	3½	5¼
3	90 00	3½	6⅛
4	130 00	4	7½
5	180 00	5	8¾
6	240 00	5¾	10⅛
7	310 00	6¾	11⅞
8	390 00	7¾	13⅞
9	480 00	9	16½
10	580 00	10¼	18⅞

Counter-shaft, Hangers and Pulleys adapted to each Blower furnished at an extra charge.

Special Blowers built to order up to a size capable of discharging 100,000 cubic feet of air per minute.

CHARLES REUTER. J. D. MALLORY.

RAILROAD IRON.

To find the No. of Tons of Rails to the mile, divide the weight per yard by 7 and multiply by 11, thus: for 56 lb. Rail, 56÷7 is 8×11 is 88 Tons, for one mile of Single Track.

Weight of Rail per yard.	Tons per mile 2,240 lbs.	Weight of Rail per yard.	Tons per mile 2,240 lbs.
8 lbs.	$12\frac{1280}{2240}$	52 lbs.	$81\frac{1600}{2240}$
12 "	$18\frac{1920}{2240}$	56 "	88
16 "	$25\frac{320}{2240}$	57 "	$89\frac{1280}{2240}$
25 "	$39\frac{640}{2240}$	60 "	$94\frac{640}{2240}$
30 "	$47\frac{320}{2240}$	62 "	$97\frac{960}{2240}$
35 "	55	64 "	$100\frac{1280}{2240}$
40 "	$62\frac{1920}{2240}$	65 "	$102\frac{320}{2240}$
45 "	$70\frac{1600}{2240}$	68 "	$106\frac{1920}{2240}$
50 "	$78\frac{1280}{2240}$	70 "	110

RAILROAD SPIKES.

$5\frac{1}{2}$ x $\frac{9}{16}$ . . . . . .
5 x $\frac{1}{2}$ . . . . . .
$3\frac{1}{2}$ x $\frac{7}{16}$ . . . . . .
3 x $\frac{6}{8}$ . . . . . .
$2\frac{1}{2}$ x $\frac{5}{16}$ . . . . . .
Railroad Fish Bars, ...

RAILROAD TRACK BOLTS.

$3\frac{1}{4}$ to 4 in. x $\frac{13}{16}$, Button Head, ...
$3\frac{1}{4}$ to 4 in. x $\frac{3}{4}$, " . . . . . .
$3\frac{1}{4}$ to $3\frac{3}{4}$ in. x $\frac{11}{16}$, " . . . . . .
$2\frac{1}{4}$ to $2\frac{3}{4}$ in. x $\frac{5}{8}$, " . . . . . .
2 to $2\frac{1}{2}$ in. x $\frac{1}{2}$, " . . . . . .

T Heads, cts. per lb. extra. | Homogeneous Steel, cts. per lb. extra.

We give special attention to the manufacture of every description of Track Bolts, (either iron or steel,) and our prices are always as favorable as the exclusive use of the best material will permit.

FISH PLATES AND BOLTS FOR ONE MILE OF TRACK.

Length of Rail.	No. Fish Plates required.	No. Bolts.	No. of Rails or Complete Joints.
24 feet.	880	1760	440
25 "	844	1688	422
26 "	812	1624	406
27 "	782	1564	391
28 "	754	1508	377
30 "	704	1408	352

No allowance made for Side Track in above tables.

NUMBER OF FISH JOINTS REQUIRED TO THE TON OF RAILS.

50 lb. Rail 30 feet long, ...	4.48 Joints.
52 " " 30 "	4.308 "
56 " " 30 "	4. "
60 " " 28 "	4. "

NUMBER OF CROSS-TIES PER MILE OF SINGLE TRACK.

Distance from Centre to Centre, ...	24 inch, 2641 Ties.
" " "	27 " 2348 "
" " "	30 " 2113 "
" " "	33 " 1921 "
" " "	36 " 1761 "

RAILROAD SPIKES.

PACKED IN KEGS OF 150 LBS. EACH.

$5\frac{1}{2}$ x $\frac{9}{16}$, $9\frac{1}{4}$ ounces, 4 Spikes per Tie, . . .	about 40 kegs per mile.
5 x $\frac{1}{2}$ $8\frac{1}{2}$ " 4 " " . . .	" 32 " "

KEYSTONE INJECTOR.

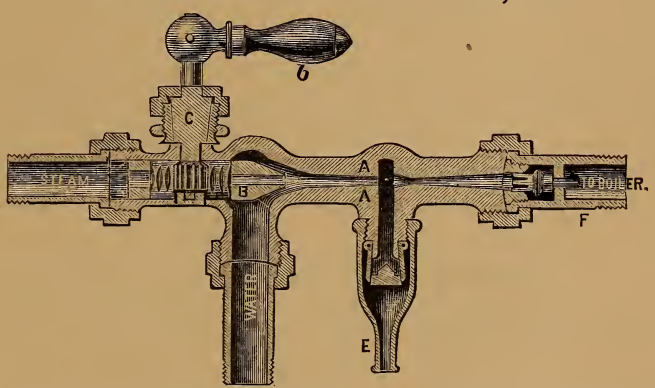
We respectfully invite the attention of Master Mechanics, Engineers, Locomotive and Boiler Builders, and the users of steam in general, to this, the simplest and most efficient Injector ever offered to the public. It is manufactured under letters patent of MESSRS. RYNER, FERGUS & FARLEY.

Among the superior advantages claimed are the following:

Simplicity of construction; at all times reliable; requires no skill to operate; it is impossible to overheat it to effect its working qualities; will raise and work warmer water than any other; the water-chamber is so constructed as to prevent its breaking; its ability to work equally as well at high or low pressure of steam; it has no chambers that will hold sediment; no stuffing boxes or packing of any kind required; can be regulated to feed as small quantity of water as is desired.

Our Injectors consist of two classes, namely, **A** and **B**, non-suction and suction.

NON-SUCTION INJECTOR, A.

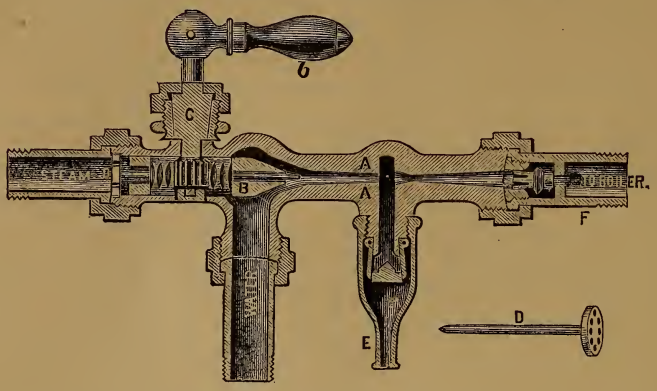


This Injector is used where the supply of water is received from a pressure, such as a street main, reservoir, etc. The overflow nozzle, **E**, is supplied with two automatic valves preventing the suction of air into the boiler. The swivel, **F**, has an inclosed check-valve, which makes it safe at all times to disconnect the injector if desired.

Method of working the non-lifter, **A**:

First—Open the water cock, then the steam valve, and move the plug **B** slowly forward with the handle *B*, until the water ceases at the overflow. (*The plug* **B** *regulates the water supply. Move it forward to cut off the supply of water, if the steam in boiler should lower; and backward, to give more water and reduce the steam, if the pressure increases.*) Or if, while the injector is working, water should escape from the overflow, move the plug forward to reduce the supply of water. If steam and water escapes from overflow, move the plug backward to give it more water.

THE SUCTION INJECTOR, B.



This class is applied where there is no pressure or head of water. For instance, where the feed water is taken from a low cistern, river, pond, &c.; and great care should be taken to have all joints air-tight, and it is best to place a piece of wire-cloth on the bottom of the water supply pipe, to prevent floating particles from entering the Injector. The jet **D** used in this injector, serves to create the vacuum, and assists in carrying the water into the boiler. It being stationary, is always in proper position to produce a vacuum, and the steam necessary to carry the water into the boiler is simply obtained by moving the plug **B,** without effecting the position or operation of the jet. As a Locomotive Injector it has no equal. The overflow nozzle is so arranged that the Injector can be turned into a heater for the tank.

Method of working Injector B.

Before opening the steam valve, move the plug **B** back tight against the disk of the jet **D,** then open the steam valve, and when the water is seen at the overflow, move the plug slowly forward until it ceases to flow. Regulate the supply of water the same as described in **A.**

Instructions for Connecting Injectors.

We warrant no Injectors unless connected according to instructions.

All pipes must be of the same internal diameter as to correspond with the injector couplings. Attach the steam pipe to the highest part of the boiler, and have it as short as possible, but in no case to a pipe supplying an engine, pumps, &c., as it causes a variation in the pressure of steam. Place a valve on the steam pipe, between the boiler and injector, and a water cock on the water pipe for non-suction Class **A** only, and be sure the opening in the key of cock will let in full supply of water. Be particular, and remove all scale, cuttings, and dirt from the pipes before connecting.

We warrant our injectors, as they are all tested before leaving the factory.

PRICE LIST.

LARGE SIZE MADE TO ORDER AT SPECIAL RATES.

Our Injectors are made entirely of Brass, and highly finished, with exception of No. 1.

SIZE NUMBERS,	1	2	3	4	5	6	7	8	9	10	12
Price, Class **A**,	$18	22	35	50	60	75	90	110	130	160	200
" Class **B**,	$	24	37	53	65	80	95	115	137	170	210
Size of Pipe Connections,	⅜	½	¾	1	1¼	1¼	1½	2	2	2	2½
Nominal horse--power at 70 lbs. pressure,	8	20	30	55	85	125	175	225	285	350	500
Number of gallons delivered per minute,	¾	2	4	8	12	18	24	31	39	48	66

The above are prices at our works. In ordering Injectors, be sure to give the Class, **A** or **B**, and the nominal horse-power. We will furnish prices for rough-finished Injectors, if desired.

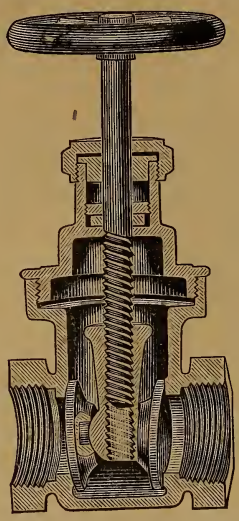
PRICES OF ATTACHMENTS.

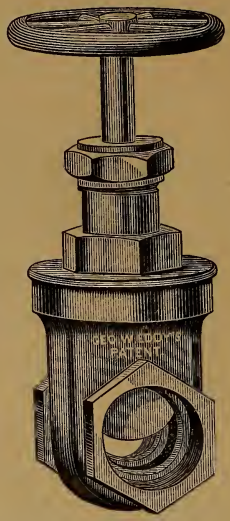
SIZE,	2	3	4	5 and 6	7	8, 9 & 10	12
Steam Valves,	1 75	2 45	3 50	5 80	6 25	9 50	18 00
Water Cocks,	1 75	2 50	3 60	5 00	6 50	9 50	18 00
Drippers,	50	50	50	65	80	1 00	1 25

To Determine Size of Injectors Required.

One nominal horse-power requires one cubic foot of water per hour, or 7½ gallons. In cylinder boilers, divide the square feet of heating surface by 10, to obtain the horse power. In flue boilers, divide by 12; and in multi-tubular by 15.

EDDY'S PATENT GLOBE VALVES.





BRASS VALVES—BEST STEAM METAL.

Size, inches.	½	¾	1	1¼	1½	2	2½	5
Price,	$1 75	2 35	3 30	4 60	6 00	9 00	18 00	28 00

IRON—BRASS MOUNTED.

ALL IRON, FOR GAS

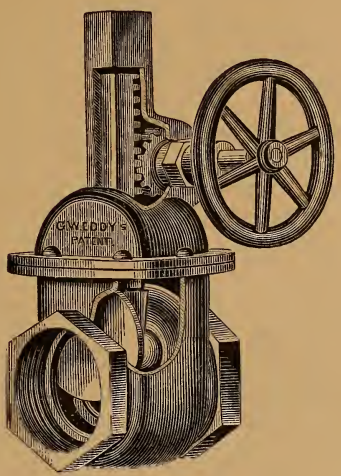
Size in Inches.	Diameter of Standard Flange.	Measurem't from face to face of Flanges.	Measurem't from face to face of Screw Socket.	Brass Mounted		All Iron.		Iron Faces.		Size in Inches.	Measurem't from end to end of Hubs.	Prices.
				Screw Socket.	Flange Ends.	Screw Socket.	Flange Ends.	Screw Socket.	Flange Ends.			
1½ in.	.....	.....	3¾ in	$5 75	....	$5 00	....	$4 50	.....	1½ in.	.....	.....
2	.....	.....	5¾	6 50	.....	6 00	....	5 25	.....	2	8¾ in.	$7 00
2½	7 in.	6½ in	6½	12 00	$13 00	11 50	$12 50	11 00	$12 00	2½	.....	12 50
3	8	7¾	7 1/16	16 00	17 00	15 00	16 00	14 00	15 00	3	10⅜	16 00
3½	8½	7 7/16	7¾	20 00	21 00	19 00	20 00	18 00	19 00	3½	.....	20 00
4	9	9⅜	10	23 00	24 00	21 50	22 50	20 50	21 50	4	13⅜	22 50
5	10	10¾	10¾	30 00	30 00	28 00	28 00	27 00	27 00	5	13⅞	28 00
6	11	12 5-16	12¼	36 00	66 00	34 00	34 00	33 00	33 00	6	15¼	34 00
8	13	12 7/16	13	.....	52 00	.....	48 00	.....	50 00	8	15⅝	48 00
10	16	14⅝	.....	.....	65 00	.....	60 00	.....	62 50	10	16	60 00
12	18	15¼	.....	.....	80 00	....	75 00	.....	78 00	12	17½	75 00

EXTRA HEAVY IRON—BRASS MOUNTED.

Designates the regular heavy pattern Water-Main Valve, with Spigot, or Hub ends, also Extra Flange Valves.	Diameter of Standard Flange.	Measurem't from face to face of Flanges.	Measurem't from end to end of Hubs.	Prices.
2 inches	.....	.....	8¾ inches.	$7 50
2½ "	7 inches.	6½ inches.	.....	13 00
3 "	8	7¾	10⅜	17 00
3½ "	8½	7 7/8	.....	23 00
4 "	9	9⅜	13⅜	28 00
5 "	10	10¾	13⅞	35 00
6 "	11	12 5-16	15¼	42 00
8 "	13	12 7/16	15⅝	56 00
10 "	16	14⅝	16	70 00
12 "	18	15¾	17½	95 00
14 "	20	15¾	17½	.....
16 "	22	16¼	17½	.....
18 "	24	16¼	19½	.....
20 "	26	17⅞	19½	.....
24 "	30	20	30¾	.....
30 "	36	22½	24	.....
36 "	.....	.....	.....	.....

CHARLES REUTER. J. D. MALLORY.

Eddy's Patent Globe Valve.



QUICK OPENING VALVE—IMPROVED SLIDING STEM.

IRON—BRASS MOUNTED. ALL BRASS.

Size in Inches.	Brass Mounted.		All Iron.		Iron Faces.		Size in Inches.	Prices.
	Screw Socket.	Flange.	Screw Socket.	Flange.	Screw Socket.	Flange.		
1¼ inch	$ 8 00		$ 7 25		$ 6 75			
2	9 50		9 00		8 25			
2½	15 75	$16 75	15 25	$16 25	14 75	$15 75		
3	19 75	20 75	18 75	19 75	17 75	18 75	1 inch.	$ 5 30
3½	24 37	25 37	23 37	24 37	22 37	23 37	1¼	7 10
4	28 00	29 00	26 50	27 50	25 50	26 50	1½	8 62
5	35 00	35 00	33 00	33 00	32 00	32 00	2	12 50
6	42 00	42 00	40 00	40 00	39 00	39 00	2½	21 75
8		60 00		55 00		53 00	3	32 50

Iron Fire Plugs and Cases.

The nozzle on both 3 and 4 inch are the same, both having inside screw (with cast iron cap) suited for standard 9 inch hose. If other nozzles are wanted, they will be made to special order.

The ordinary length of Fire Plugs is for four feet from level of centre of roadway to that of centre of main, but they are made to order for any depth of line that may be required.

They are furnished complete, with hose nozzle and caps, and internal waste.

	3 inch.	4 inch.	4 inch subway.
Fire Plugs	$19.00	$30.00	$30.00
Add for each foot of increased length	1.25	2.00	2.00

	3 inch.	4 inch.	4 inch subway.
Cases for Fire Plugs	$10.00	$16.00	$12.00

Fire Hydrant Valve, for Factories, Railroad Depots, &c., with Nut or Wheel Valve 2½ inches $10.00

PRICE LIST

OF THE

UTICA STEAM GAUGES.

IRON CASE.

No. A,	3½ inch Close Dial, for Air,	$ 8 00
0,	3½ inch Close Dial, for Steam,	8 00
1,	5 inch Close Dial,	10 00
2,	6 inch Open Dial,	12 00
B,	7 inch Open Dial, Locomotive, Stationary, or Vacuum,	16 00

STEAM METAL CASE.

No. 2½,	3½ inch Close Dial,	$ 9 00
3,	5 inch Close Dial,	15 00
4,	6 inch Open Dial, Stationary,	18 00
5,	6 inch Open Dial, Locomotive,	18 00
6,	7 inch Open Dial, Locomotive, Stationary or Vacuum,	22 00
7,	8 inch Open Dial, High or Low Pressure or Vacuum,	34 00
8,	8½ inch Open Dial,	40 00
9,	10 inch Open Dial,	55 00

PLEASE ORDER BY THE NUMBERS ON THE LIST.

We furnish with Iron Case Gauges, excepting Nos. *A*. and *O*, a Plain Gauge Cock and Syphon and with Steam Metal Case Gauges, excepting No. 2½, a Gauge Cock and Union, without extra charge. We pack each Gauge in a separate box

CLOCKS.

For Locomotive and Engine Room use, in brass cases, well finished, and with plain or ornamented dials. In these we use the common American, the Seth Thomas, and an imported full jewelled movement.

PRICES.

No. 1,	3½ inch Dial, Common 1 day Movement,	$12 00
1½,	3¾ inch Dial, S. Thomas, 1 day Movement,	26 00
2,	8 inch Dial, S. Thomas, 1 day Movement,	50 00
3,	8½ inch Dial, S. Thomas, 1 day Movement,	58 00

With Finest Marine, Full Jewelled, Imported Movement.

No. 2½,	8 inch Dial, 8 day Movement,	$64 00
3½,	8½ inch Dial, 8 day Movement,	75 00
4,	10 inch Dial, 8 day Movement,	95 00

These Clocks, Counters and Gauges are approved for use by the United States Navy Department.

CHARLES REUTER. J. D. MALLORY